

DOCUMENT RESUME

ED 160 893

08

CE 018 409

AUTHOR Brower, Edward B.
 TITLE Course of Study for Secondary Level Bookkeeping/Accounting. Final Report.
 INSTITUTION Temple Univ., Philadelphia, Pa. Div. of Vocational Education.
 SPONS AGENCY Pennsylvania State Dept. of Education, Harrisburg. Bureau of Vocational and Technical Education.
 EUREAU NO 93-8004
 PUB DATE Sep 78
 NOTE 131p.; Not available in hard copy because of reproducibility problems

EDRS PRICE MF-\$0.83 Plus Postage. HC Not Available from EDRS.
 DESCRIPTORS *Accounting; Behavioral Objectives; *Bookkeeping; Business Education; Business Skills; Career Awareness; Career Exploration; *Career Opportunities; Course Descriptions; Curriculum Evaluation; Curriculum Guides; *Educational Methods; Educational Resources; *Employment Qualifications; Flexible Progression; Higher Education; Integrated Curriculum; Job Skills; Occupational Information; *Performance Based Education; Secondary Education; Student Evaluation; Systems Approach; Vocational Education; Work Attitudes

ABSTRACT

The present project was designed to continue the preparation of a course of study useful for developing secondary level bookkeeping/accounting instruction. The course of study is intended to (1) derive vocational instruction for students with varying career goals, (2) develop accounting-oriented career exploration units for Introduction to Vocations classes or conceptually similar career awareness activities, (3) develop an awareness of the functions and operations of business, (4) evaluate instruction, and (5) orient college accounting instruction designed to prepare secondary level bookkeeping/accounting instructors. The project outcomes include a bookkeeping/accounting course of study with the content arranged under the following chapter headings: Chapter 1--Accounting in the Secondary School; Chapter 2--Accounting Careers; Chapter 3--Accounting Content; Chapter 4--Organization, Resources and Methods; and Chapter 5--Evaluation. It is anticipated that the course of study will be used by teachers, teacher educators, curriculum planners, and others charged with the development of accounting instruction for young people with varying career goals. (Author/CSS)

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11/2/79
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ED160893

FINAL REPORT

COURSE OF STUDY FOR SECONDARY LEVEL

BOOKKEEPING/ACCOUNTING

Prepared by

EDWARD B. BROWER

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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Temple University
Philadelphia, Pennsylvania
September, 1978

Project Number 93-8004

CE 018 409

The project reported herein was conducted pursuant to a grant from the Division of Vocational Education, Pennsylvania Department of Education.

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ACKNOWLEDGEMENTS

The present project was completed with the assistance of many people.

Dr. William Selden, Senior Program Specialist, Business Education, provided many useful comments both orally and in writing. Dr. Adele Schrag, Temple University, was kind enough to take time from a busy schedule to read and react to one of the numerous drafts. Finally, an ad hoc advisory committee spent numerous hours reading, reacting and meeting with me to provide the necessary input from accounting teachers. Members of the advisory committee were:

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ABSTRACT

Course of Study for Secondary Level Bookkeeping/Accounting (continuation)

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\$5,000
10/1/77 to 6/30/78

The present project was designed to continue the development of a course of study useful for developing secondary level bookkeeping/accounting instruction.

Objectives

1. The present project is designed to continue the development of a secondary level bookkeeping/accounting course of study that can be used to:
 - a. Derive vocational instruction for students with varying career goals,
 - b. develop accounting-oriented career exploration units for Introduction to Vocations classes or conceptually similar career awareness activities,
 - c. develop an awareness of the functions and operations of business,
 - d. evaluate instruction, and
 - e. orient college accounting instruction designed to prepare secondary level bookkeeping/accounting instructors.

Outcomes

Outcomes for the present project include a bookkeeping/accounting course of study, with content arranged under the following chapter headings:

Chapter 1--Accounting in the Secondary School

Chapter 2--Accounting Careers

Chapter 3--Accounting Content

Chapter 4--Organization, Resources and Methods

Chapter 5--Evaluation

Audience

It is anticipated that a current course of study will be used by teachers, teacher educators, curriculum planners, and additional people when developing accounting instruction for young people with varying career goals.

Products

Course of Study (described above)

METHODS

The course of study described in the present project will be used by bookkeeping/accounting instructors, curriculum planners, teacher educators and other individuals. It is anticipated that the ultimate beneficiary of a current bookkeeping/accounting course of study will be young people who will live and work in a society in which a knowledge of accounting is often a prerequisite for meaningful participation.

The first phase of the present project was completed during 1976-1977 and resulted in a draft course of study.

Refinement activities began in October, 1977. The vast majority of research and writing was completed during May-June 1978. The final document is included as part of the present report.

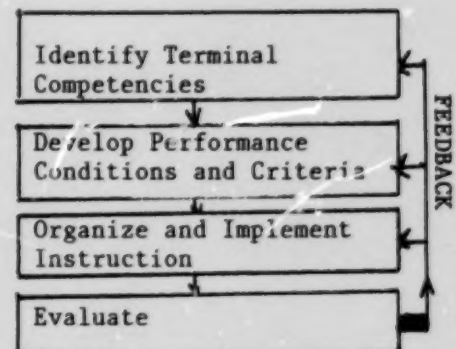
During the time period for the present project, the researcher had the cooperation of many individuals. Dr. William Selden, Senior Program Specialist, read a draft of the course of study and provided an unusual amount of invaluable input. Dr. Adele Schrag, Temple University, also read draft copy and provided additional input that was subsequently incorporated into the final copy. Finally, an ad hoc advisory committee of three accounting instructors was assembled and used to provide additional suggestions for improvement. Specifically, the advisory committee was mailed draft copies of the course of study and asked to review and make whatever comments they felt necessary. During early May, the advisory committee and the researcher met and reviewed a draft copy page-by-page. Committee members made comments they felt were necessary. The vast majority of comments made by the advisory committee were incorporated into the final copy.

OUTCOMES

The product that emerged from the present project was an accounting/bookkeeping course of study. From the beginning of the two-year project, the underlying design was to provide a usable tool for teachers and curriculum planners. The design was never to compile a number of "tricks of the trade," that would become outdated. The researcher attempted to provide users not only with contemporary thinking concerning accounting instruction, but also with a systems approach to developing instruction that could be used to update content. Conceptually, the course of study and the systems approach for developing instruction come together as illustrated below:

COURSE OF STUDY

Chapter 1--Accounting in the Secondary School
Chapter 2--Accounting Careers
Chapter 3--Accounting Content
Chapter 4--Organization, Resources and Methods
Chapter 5--Evaluation



Thus, the course of study is a viable document for the present and the means to update and modify accounting content in the future.

The five chapters representing the course of study constitute the remainder of the final report.

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CHAPTER ONE

ACCOUNTING IN THE SECONDARY SCHOOL CURRICULUM

This Bulletin has one primary purpose-to assist classroom teachers to provide more effective accounting (bookkeeping) instruction for young people. To guide the reader through the course of study, a series of discussions are presented under the following chapter headings:

Accounting in the Secondary School

Accounting Careers

Accounting Content

Organization, Resources and Methods

Evaluation

Chapter 1 is designed to establish the role of accounting instruction in the secondary school. In the chapter, you will find:

A set of principles useful for guiding accounting instruction.

A rationale that suggests useful definitions and parameters for accounting instruction.

A review of the content that should be emphasized in accounting instruction.

A set of outcomes, useful for developing competencies and performance goals.

Discussion on the grade placement and role of the accounting teacher.

A discussion of the systems approach for developing accounting instruction.

Principles for Effective Accounting Instruction

Throughout the course of study a series of fundamental ideas are emphasized. Each idea is stated below as a principle for effective accounting instruction. Each principle is developed at some point in Chapters 1-5.

Principle 1

Individualizing instruction is a concept that can apply to accounting at the secondary level and should be viewed as two dimensional. First, the ends (outcomes) of accounting instruction should be individualized to accommodate students with different career goals. Second, the means of accounting instruction should be individualized to accommodate various learning styles and aptitudes. (Chapters 2 and 3 include discussion for individualizing the ends of accounting instruction. Individualizing the means of accounting instruction is presented in Chapter 4.)

Principle 2

Accounting instruction should emphasize the role of people, forms, equipment and procedures used to process financial information. (Chapter 3.)

Principle 3

Transfer of learning will take place to the degree that vocational accounting instruction approximates accounting or office related employment. (Chapter 3.)

Principle 4

Competency based accounting instruction has the potential to result in significantly better learning outcomes than instruction that does not include competency based characteristics. (Chapter 1.)

Principle 5

The spiral approach to accounting instruction is proper providing units of study are comprehensive and complete, with successive units presenting new subsystems, procedures, forms, career opportunities, special equipment, and reinforcement activities. (Chapter 3.)

Principle 6

Instruction which includes the entire accounting cycle is not predicated on vocational competence per se, but on the assumption that knowledge of the entire accounting cycle will complement all instruction and provide the teacher with the opportunity to integrate attitude instruction, career guidance, economics instruction, knowledge about business instruction, and personal-use instruction. (Chapter 3.)

Principle 7

Accounting instruction is an effective vehicle for teaching young people to develop their reasoning ability. (Chapter 4.)

Principle 8

Effective accounting instructors understand and can apply both accounting theory and learning theory to the classroom environment. (Chapter 4.)

Principle 9

Accounting can be an effective guidance tool, as well as preparation for accounting careers. (Chapter 3.)

Rationale

Along with all high school courses, accounting finds its rationale, its place, its objectives and its context challenged by a series of changes in society. Accounting must respond to these changes without relinquishing what is sound and necessary. The discussion under Definitions and Parameters is designed to establish the role of accounting instruction, and, thus, become the basis for maintaining what is sound and necessary.

Definitions

Accounting is the preparation and interpretation of financial records. Thus, accounting can be viewed as consisting of two phases. The first phase includes the creation of financial information through the recording, classifying, and summarizing of business transactions. The second phase requires that financial information be analyzed and interpreted. Here, the significance of summarized financial information is determined by management, owners, creditors, investors, bargaining units, and prospective customers.

Accounting instruction includes those activities designed to prepare people for accounting careers.

Parameters

Accounting instruction takes place at different educational levels and touches many age groups. Thus, there is the need to define parameters for secondary school accounting instruction. Relevant issues and discussion is offered below to establish the role of accounting instruction in the secondary schools.

Accounting Career Ladder. Accounting career opportunities can be viewed in three levels: accounting clerks, para-professional accountants, and professional accountants. The functional differences between the three levels of accounting career opportunities are not easy to identify. However, the notion of a career ladder with immediate and ultimate employment opportunities does enable the secondary level accounting instructor to provide instruction that is meaningful to every student. (The accounting career ladder is developed in Chapter 2.)

Accounting Career Preparation in the Secondary School. In the secondary school, vocational instruction should be designed to prepare young people for employment as accounting clerks. Secondary school accounting instruction also should accommodate students with other career goals. Many students enroll in secondary school accounting as preparation for office positions that include accounting knowledge as part of the job description. A list of job titles that require varying amounts of accounting knowledge may be found in Figure 1.¹

Accounting and Computing
Occupations Cluster

Account Information Clerk
Clerk
Accounting Clerk
Accounts Payable Clerk
Accounts Receivable Clerk
Audit Clerk
Billing Machine Operator
Bookkeeper (Accounts Payable)
Bookkeeper (Accounts Receivable)
Bookkeeper (Others)
Bookkeeping Machine
Operator
Cashier (Office)
Full-Charge Bookkeeper
General Ledger Clerk
Payroll Clerk
Teller (Banking)
Teller (Office)

Information Communication
Occupations Cluster

Correspondence
(Clerical)
Credit Clerk
Information Clerk
(Clerical)
Receptionist
Sales Correspondent

Materials Support Occupations
Cluster

Inventory Clerk
Receiving Clerk
Shipping Clerk
Stock Control Clerk
Typing and Related
Occupations Cluster
Addresser
Clerk-Typist
Perforator Typist
Statistical Typist
Telegraphic-Typewriter
Operator
Typist
Vari-Typist

Other Office Occupations

Claims Clerk
Credit Authorizer
Forms Analyst
Loss-of-Claim Clerk
Order Clerk

Business Data Processing
Systems Occupations Cluster

Card-Punch Operator
(Key-Punch Operator)
Card-Tape-Converter
Operator
Computer Operator
Data Typist (Clerical)
Programmer (Chief Business)
Sorting Machine Operator
Tabulating Machine
Operator
Verifier Operator

Filing, Office Machines,
and General Office Clerical
Occupations Cluster

Accounting Clerk
(Clerical)
Addresser
Billing Clerk
Coding Clerk
Duplicating Machine
Operator
File Clerk
General Office Clerk
Record Clerk

Supervisory and Administrative
Management Occupations Cluster

Administrative Assistant
Bank Cashier (Banking)
Chief Clerk
Office Manager
Supervisor (Clerical)

Other Occupations

Purchasing Agent
Purchasing Clerk

Stenographic, Secretarial,
and Related Occupations
Cluster

Administrative Secretary
Educational Secretary
Executive Secretary
Legal Secretary
Medical Secretary
Secretary
Social Secretary
Stenographer
Technical Secretary

FIGURE 1

In addition to the above, many students enroll in secondary school accounting for guidance purposes. They desire some "tryout" experiences that relate to professional accounting or other business-oriented career goals. (See Chapter 3 for additional discussion on the guidance aspect of secondary school accounting instruction.)

Content Emphasized in Secondary School Accounting Instruction.

Several research studies have described the work performed by entry-level accounting employees. The studies are instructive and represent a starting point for deriving content emphasis. In summary, the research studies suggest that entry-level accounting positions are not of the "full charge" variety, but require employees to perform many seemingly isolated tasks. (See Chapter 3.)

While tasks are an appropriate place to begin discussing content emphasis, the present syllabus places accounting content in a larger framework. After reviewing the tasks identified by research and entry-level job titles, the most appropriate framework for accounting instruction appears to be the accounting subsystem. Vocational accounting instruction should emphasize the kinds of activities performed in the various accounting subsystems--banking, payroll, purchases, sales, cash receipts, cash payments, and petty cash. (The content to be included in the accounting subsystems is presented in Chapter 3.)

Teaching the Accounting Cycle. The above discussion suggests that the primary framework for secondary school accounting instruction is the subsystem. Thus, the need for teaching the entire accounting cycle is an issue that has been raised by many researchers and by many teachers. Major questions relate to whether to teach the accounting cycle and, if taught, how much emphasis should be placed on the entire cycle.

The accounting cycle should be taught. However, the primary purpose should relate to understanding the total picture. If young people are to see how their subsystems activities relate to the work performed by para-professional or professional accountants and the decisions made by management, they must be exposed to the entire accounting cycle. The danger lies in the emphasis attached to end-of-accounting-period activities. The teacher's approach should be illustrative, with emphasis placed on the need for accurate information fed into end-of accounting period activities by accounting clerks, and the like. Little, if any, evaluation emphasis (for grading purposes) should be placed on the end-of-period activities.

Components of Vocational Competency for Accounting Employees. The present discussion has centered on content emphasis. Knowledge of accounting content is one component of vocational competence. There is also a second component of vocational competence for the accounting employee--possession of certain interpersonal traits. The requisite interpersonal traits are discussed in Chapter 3.

Corollary Learnings. Accounting content allows teachers to integrate many corollary learnings into their instruction. For instance, accounting content allows teachers to introduce economic concepts, behavior modification (attitude) activities, and instruction about business. (See Chapter 3.)

Outcomes

The outcomes for secondary level accounting instruction should be related to the needs of students and the needs of business. Below is a list of planning objectives. Each planning objective is broad-based, and thus, suggests broad areas of content. Each accounting instructor should take the planning objectives and design competencies and perfor-

mance criteria for his/her accounting class(es). For example, the specific objectives for students with vocational objectives would differ from objectives for students who enroll in accounting with guidance objectives.

Students enrolled in accounting, depending on their career goals, should:

1. describe career opportunities in accounting including levels of accounting employment, necessary education, employment outlook, salary potential, requisite personal traits and the like.
2. describe the need for accounting instruction as a component for vocational competence in related office careers.
3. utilize accounting career information as one input for making a career choice.
4. trace business events (transactions) from source documents through the accounting system to the appropriate financial statement(s).
5. identify the forms, equipment, procedures and people comprising one or more accounting subsystems.
6. originate, analyze and process source data through one or more accounting subsystems, using a manual data processing system.
7. complete end-of-accounting period activities, through the preparation of financial statements, as a means of visualizing the totality of an accounting system.
8. describe and/or use elements of an automatic business data processing system.
9. identify the proper or improper application of accounting controls.
10. identify the proper or improper application of accounting principles.
11. describe and contrast the accounting records required by the principal types of business organizations.

12. complete and analyze selected interpretations of accounting information, as a means for developing an awareness that accounting is the basis for business decisions.
13. interact positively with classmates.
14. internalize those personal traits that appear to be characteristics of effective office employees.
15. use their accounting knowledge as a basis for advanced accounting study.
16. apply their accounting instruction to selected personal use needs.

Grade Placement

Two years should be allowed for secondary school accounting instruction. Instruction should be completed as close to graduation as possible. The grade level at which the two years of instruction should begin probably is determined by the entire business education program and the instructional approach used by each school.

The presence of a cooperative business education program in the senior year suggests that two years of accounting instruction begins in the 10th grade. Absence of a cooperative business education program allows accounting instruction to begin in the 11th grade.

Other considerations also determine when accounting instruction begins. Traditional, group-paced, one- and two-year programs are rather easy to fix in terms of grade placement. However, schools that adopt the mastery learning concept (see Chapter 3) find that self-pacing and traditional accounting content might require more or less than two years to complete vocational objectives. Thus, it may be that students will need two years to "master" a traditional one-year accounting program or three years for a traditional two-year program. The discussion in Chapter 3 explores self-pacing and other individualized instruction considerations.

The maturity of students should also be considered when determining grade placement. Various research studies indicate that accounting instruction that begins in the junior year is more effective than instruction beginning in the sophomore year.

Role of the Teacher

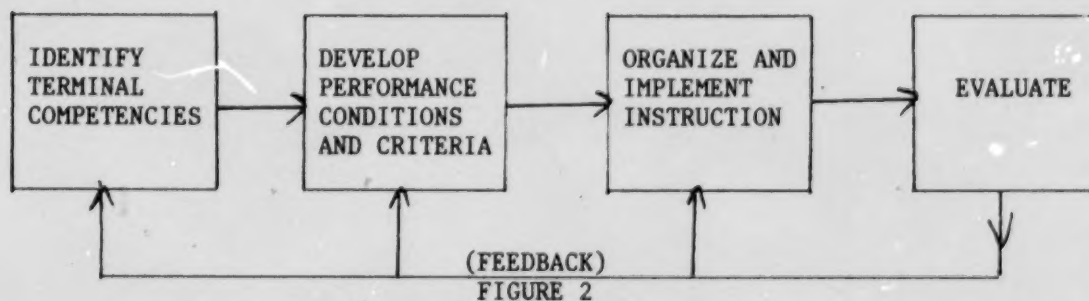
The role of the teacher is central for the provision of effective accounting instruction. Below are a number of teacher roles or responsibilities that appear to relate to the essence of this publication and, thus, to effective instruction.²

1. Identify the needs of business. The discussion under Content Emphasis, Chapter 1, and in Chapter 2 begins to identify the needs of business.
2. Identify the needs of students. The potential needs of students are identified in the discussion on accounting careers and corollary learnings. The identification of the needs of particular students is a responsibility that must be completed on a one-to-one basis.
3. Develop competencies and performance criteria. Competencies (accounting tasks and appropriate standards) and performance criteria are unique to a particular school. The outcomes listed on pages 1-8 and 1-9 and the discussion in Chapters 2 and 3 provides the basis for developing both competencies and performance criteria.
4. Use learning theory. Learning principles that apply to accounting instruction are included in Chapter 4.
5. Use a variety of materials of instruction. A discussion of the various materials of instruction available to accounting teachers is found in Chapter 4.
6. Vary methods of instruction. Methods of instruction and the potential impact of a variety of methods is found in Chapter 4.

7. Use current accounting theory, principles, and controls. Accounting theory, principles and controls are fundamental to accounting employment, and thus, ensure transfer of learning from school to employment.

A Systems Approach for Developing Accounting Instruction

The need to carefully plan accounting instruction is obvious. However, the steps one uses to plan instruction are not so obvious. The most effective plan for developing accounting instruction is a competency-based approach that defines, in advance of instruction, what is to be accomplished; identifies resources and procedures that will enable goals to be met; and, provides a means for evaluating the worth of instruction.³ A systems approach for developing accounting instruction appears in Figure 2 as a four-step process, with subsequent modifications possible through a feedback loop.



Step 1 - Identify Terminal Competencies

A competency is a task performed at a particular standard. Thus, accounting competencies are accounting tasks performed at particular standards. For example, an accounting competency could read as follows: "Accurately post from single- and multi-column journals to general ledger accounts." In the competency just cited, "accurately" is the standard and "post from single- and multi-column journals to general ledger accounts" is the task.

The discussions in Chapters 2 and 3 are designed to assist teachers in identifying tasks to be performed by accounting employees. Appropriate standards must be determined by consulting area employers. There is no single standard required by all employers.

Step 2 - Develop Performance Conditions and Criteria

The first step in the systems approach for developing accounting instruction is to identify terminal competencies. The second step--develop performance conditions and criteria--is designed to identify the materials, time, and other conditions of performance. The second step in the systems approach also includes the development of performance criteria. Performance criteria are the standards students will meet after completing the learning activities and should approximate business standards.

When the performance conditions and criteria are added to a competency, the result is a performance goal. A performance goal for the competency cited in Step 1 might read as follows:

Within 40 minutes, the student will accurately post 15 completed journal entries from single- and multi-column journals to blank general ledger accounts. All work must be error free. The student will be supplied with the completed journal entries and blank general ledger accounts.

The conditions of performance in the above goal are time (40 minutes) and material (15 completed journal entries and blank general ledger accounts). The performance criterion is, "All work must be error free."

Step 3 - Organize and Implement Instruction

The third step in the systems approach--organize and implement instruction--includes the identification and application of appropriate organizational patterns, learning resources and activities, teaching

styles and learning principles. Discussion relevant to organizing and implementing instruction is found in Chapter 4.

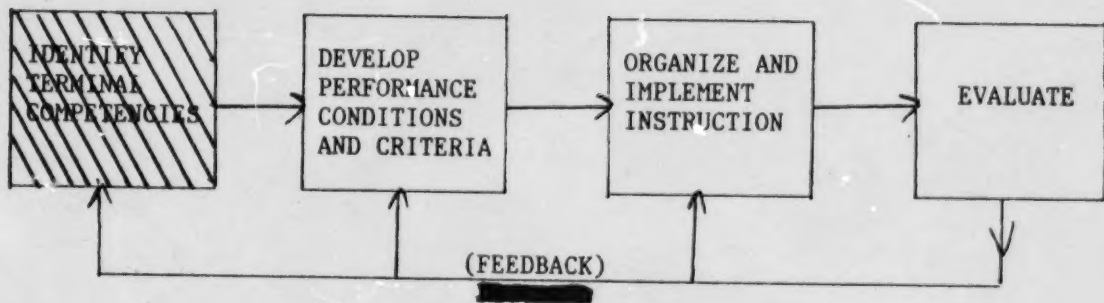
Step 4 - Evaluation

The fourth step--evaluation--determines the degree to which the system is working and provides possible "hints" as to where the system might be modified. Thus, the evaluation step determines whether students are competent under the prescribed conditions and criteria; and, if they are not competent, the evaluation step provides the basis for making program modifications.

The systems approach outlined above focuses on predetermining the kinds of tasks students should be capable of performing as a result of instruction. Thus, students and teachers begin the teaching/learning process with their goals and responsibilities clearly specified.

Summary And Preview

Chapter 1 established the role of accounting in the secondary school. The discussion in Chapter 2 is designed to provide the teacher with accounting related career information. The content in Chapter 2 will be useful for developing career oriented accounting lessons, providing the teacher with career information, and for use with students who wish to complete some independent reading.



Chapter Two

Accounting Careers

This chapter also could be entitled "Individualizing the Ends of Accounting Instruction." The primary purpose of the subsequent material is to provide the teacher, and ultimately the student, with career content that can be integrated with subject matter content. To adopt the notion that all students enter accounting with the same career goal (or with any career goal) is folly. Perhaps the first objective of the teacher is to place accounting instruction in the framework of "this is what you can do with what you will be learning in accounting." To the degree that the notion that accounting can lead to numerous career paths is developed by the teacher, to that same degree intrinsic (from within) student motivation will be developed.

ACCOUNTING AND THE WORLD OF WORK

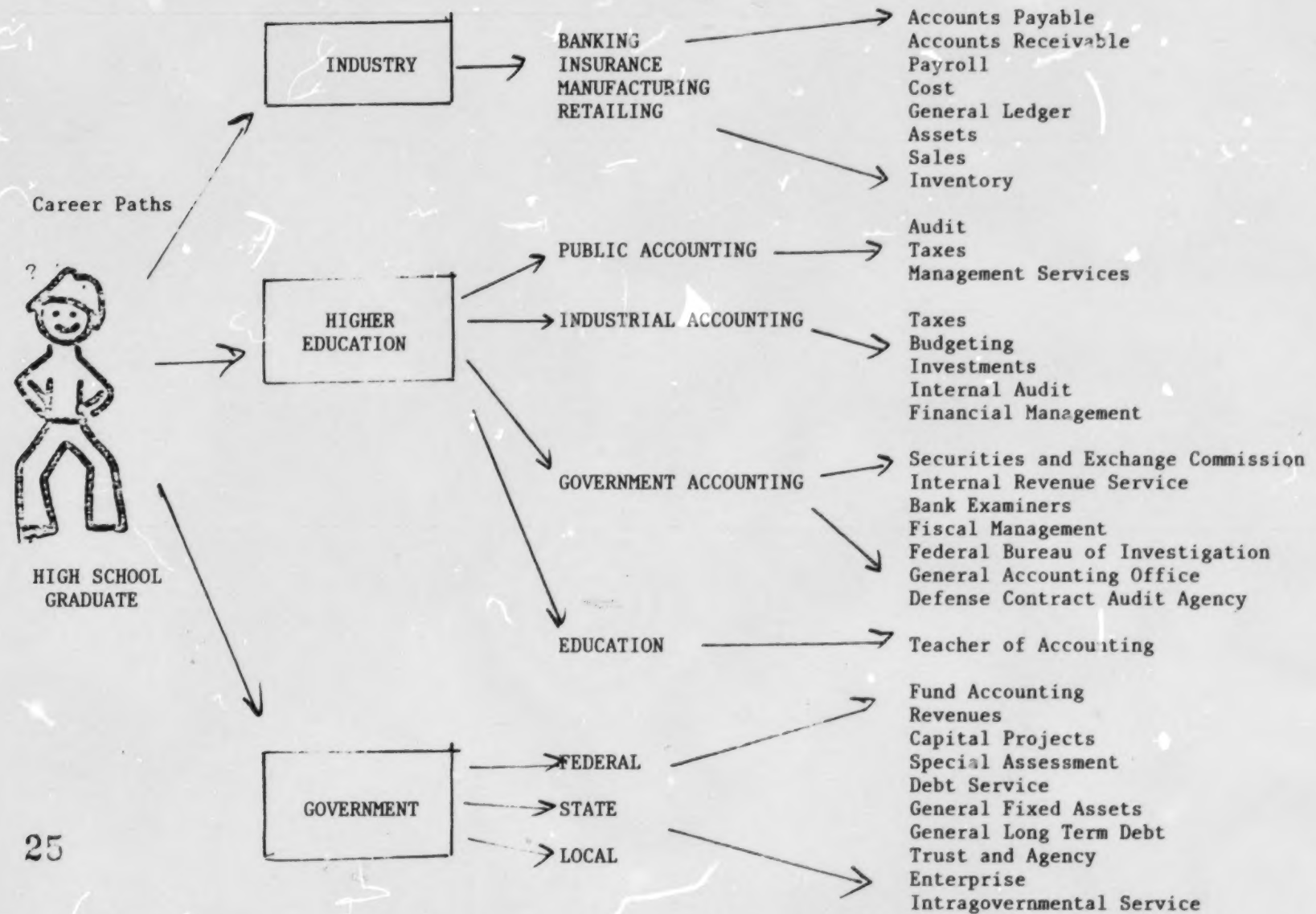


Figure 3

The accounting career information presented in this chapter should be "taught" systematically throughout the school year. Entire class periods might be devoted to discussions on the work performed by accounting personnel, prerequisite personal traits, the need for confidentiality, and the like. Or perhaps 10 minutes, twice a week, might be devoted to questions like: What are the needs for accounting clerks, para-professional accountants and professional accountants? Thus, the method for integrating career content is personal.

Career Paths

Students who finish secondary level accounting instruction have the choice of immediate employment or additional accounting instruction at private business schools or at the two-year or four-year college level. The possible career paths open to the high school graduate are summarized below and illustrated in Figure 3.⁴

Employment opportunities for the high school graduate exist in companies of all sizes engaged in banking, insurance, manufacturing, retailing, and other types of businesses. Accounting employment opportunities also exist in local and state governments and in the federal government. Students who obtain accounting employment upon graduation do so at the accounting clerk level.

Students who choose to further their accounting education can complete two-year or four-year college programs. Two-year colleges have developed rather extensive career programs that lead to para-professional accounting employment in industry or government. Students who complete four-year college accounting programs have a number of career opportunities as professional accountants in industry, government, or public accounting.

RELATION OF ACCOUNTING ACTIVITIES TO CAREER OPPORTUNITIES

ROUTINENESS OF ACTIVITIES	ACTIVITIES IN A RECORDS SYSTEM	ACTIVITIES PERFORMED BY
Activities are routine	1. <u>Recording</u> financial information, including the origination of sales, purchases, receipts, payments, and similar records using pen, pencil, punched holes, or magnetic impressions.	/ P . P . / A . R . A / R . O . C / A . F . C / . E . O / P / S . U / R / S . N / O / I . T / F / O . I / E / N . N / S / A . G / S / L . / I / / / O / / / N / A / / A / C /
	2. <u>Sorting</u> financial information, including the categorizing of sales, purchases, receipts, payments, and similar information.	. L / C / . / O / . A / U / C . C / N / L . C / T / E . O / A / R . U / N / K . N / T / S . T / S / . A . / . N . / . T . / . S . /
	3. <u>Summarizing</u> financial information, including the reporting of total sales, purchases, receipts, payments, and similarly sorted information.	
	4. <u>Interpreting</u> financial information that has been recorded, sorted and summarized. Interpretation takes the form of evaluating past performance and making business decisions that affect future operations.	
Activities are non-routine		

////////////////////
.....

Indicates a frequently-performed activity.
Indicates an infrequently-performed activity.

Figure 4

Sights and Sounds

Figure 4 provides a starting point for discussing the work performed by accounting personnel. Three kinds of information are included in this illustration-the "routineness" of activities in a records system, activities performed in an accounting system, and three levels of accounting employment. The arrow beneath "Routineness of Activities" indicates that recording activities are generally routine, while interpreting activities are non-routine. The information beneath "Activities in a Record System" describes typically performed accounting activities. The information beneath "Activities Performed by" provides a general indication of the kinds of work completed by three levels of accountants: accounting clerks, para-professional accountants, and professional accountants. Thus, career opportunities for accounting clerks are primarily in the recording and sorting phases, and the professional accountant spends his/her time interpreting the efforts of both accounting clerks and para-professional accountants.

The duties of accounting clerks, para-professional accountants, and professional accountants are different for each business. In small businesses, the accounting clerk may complete all summarizing work. Similarly, the para-professional accountant frequently performs both recording duties and interpreting tasks. If the levels of accounting positions are viewed as relative, one senses a hierarchy of career opportunities and that is the important point.

To assist in providing specific information, additional descriptive material is presented below.

Accounting Clerks

Accounting clerks create financial information. That is, they record, sort, and summarize accounting activities. Generally, accounting clerks perform their activities in one of the subsystems. Sample job descriptions are:⁵

Accounting Clerk

Performs one or more accounting clerical tasks such as posting to registers and ledgers; reconciling bank accounts; verifying the internal consistency, completeness, and mathematical accuracy of accounting documents; assigning prescribed accounting distribution codes; examining and verifying for clerical accuracy various types of reports, lists, calculations, posting, etc.; or preparing simple or assisting in preparing more complicated, journal vouchers. May work in either a manual or automated accounting system.

The work requires a knowledge of clerical methods and office practices and procedures which relates to the clerical processing and recording of transactions and accounting information. With experience, the worker typically becomes familiar with the bookkeeping and accounting terms and procedures used in the assigned work, but is not required to have a knowledge of the formal principles of bookkeeping and accounting. Positions are classified into levels on the basis of the following definitions:

Accounting Clerk - Class A. Under general supervision, performs accounting clerical operations which require the application of experience and judgment; for example, clerically processing complicated or nonrepetitive accounting transactions, selecting among a substantial variety of prescribed accounting codes and classifications, or tracing transactions through previous accounting actions to determine source of discrepancies. May be assisted by one or more Class B accounting clerks.

Accounting Clerk - Class B. Under close supervision, following detailed instructions and standardized procedures, performs one or more routine accounting clerical operations, such as posting to ledgers, cards, or worksheets where identification of items and locations of postings are clearly indicated; checking accuracy and completeness of standardized and repetitive records or accounting documents; and coding documents using a few prescribed accounting codes.

Payroll Clerk

Computes wages of company employees and enters the necessary data on the payroll sheets. Duties involve: calculating workers' earnings based on time or production records; and posting calculated data on payroll sheets, showing information such as worker's name, working days, time, rate, deductions for insurance, and total wages due. May make out paychecks and assist paymaster in making up and distributing pay envelopes. May use a calculating machine.

In addition to the kinds of opportunities found in the sample job descriptions, accounting clerks also complete various banking activities, such as checkwriting, and bank reconciliation, or function as full-charge bookkeepers.

As a part of their employment, accounting clerks frequently are required to use adding-listing machines, and spend much time operating one of the commonly used accounting machines (posting, billing, etc.). Also, the very nature of work performed by accounting clerks brings them into contact with various publics--customers, creditors and fellow employees. These various contacts require an even temper under stress situations, positive work attitudes, and the ability to retain confidential information (i.e., payroll).

Para-professional Accountants

To provide sights and sounds descriptions for para-professional accountants is indeed difficult generally, when one thinks of accounting careers the focus is on accounting clerks and professional accountants. Two-year colleges, as indicated in Figure 5, have recently developed some rather extensive and sophisticated career-oriented accounting programs. Many people completing two-year community college programs have completed 18 semester hours in accounting, plus related business courses. Prepared with this type of education, many two-year college graduates are seeking and obtaining accounting trainee positions in small- and medium-size businesses.

Currently available information suggests that para-professional accountants begin their careers at upper level accounting clerk positions, as accounting trainees, junior accountants, cost clerks, or in full-charge positions where employers are seeking the minimum of experience. Perhaps the major difference between the initial career opportunities for para-professional accountants and accountant clerks is in the rate of advancement.

How extensive are the employment opportunities described above? The answers are being made available as chairpersons of two-year business

programs begin to gather valid and reliable descriptive data on their graduates. As the data is collected and analyzed, the findings should allow for definite statements concerning the employment activities of para-professional accountants.

Professional Accountants

The professional accountant interprets financial information as an aid to making business decisions, designs and evaluates the efficiency of accounting systems; prepares budgets, cost analyses and income tax reports; audits the work of other accounting employees; and the like.

Generally, the professional accountant finds his/her career opportunities in public accounting, industrial accounting, or governmental accounting. Numerous professional accountants also choose accounting instruction as a career.

Public Accounting. An individual interested in a public accounting career will generally work for a firm that provides accounting services for individuals and/or businesses. Public accounting firms engage in bookkeeping, accounting, auditing, tax planning and preparation, and management services. The percentage of time spent on the various services varies depending on the size of the public accounting firm. A small public accounting firm may devote 25 percent of its staff time to performing bookkeeping services (recording, sorting, and summarizing), while a large firm may devote only 2 percent of staff time to this repetitive function. Similarly, large public accounting firms may devote approximately 65 percent of staff time in auditing functions, while small firms may devote only 5 percent to auditing. The duties of public accountants also vary depending on the size of the employing firm.

Auditors employed by public accounting firms are charged with the responsibility for conducting careful reviews of a client's accounting system and the results of business operations. Based on their review, public accountants are then in the position to render a written, professional opinion concerning the fairness and reliability of the client's financial statements. The public accounting firm and its employees function in an independent capacity. Thus, great reliance is placed on the independent opinion by interested third parties. (The position of trust is such that public accounting firms have been held liable for inaccurate information appearing on financial statements.)

The tax consequences of many business decisions are often important to business executives. Consequently, these executives often seek the advice and consultation of public accountants on tax matters. To render advice on tax matters requires the public accountant to understand not only accounting theory, but also tax statutes, regulations, and previous court decisions.

Perhaps the most rapidly growing area of service for public accountants is management services. In recent years, large public accounting firms have developed sophisticated management consulting departments that have expertise clients do not normally possess. Examples of management services would include market research, systems design, recruitment of accounting personnel, merger advice, engineering consultation, financial planning and budgeting.

Industrial Accounting. Individuals who work for private businesses are commonly referred to as industrial accountants. The responsibilities of industrial accountants include the design of accounting systems, cost accounting, budgeting, tax accounting and internal auditing. Industrial accountants who design accounting systems provide management with financial

information that is used to prepare government reports, provide owners with the results of business operations and provide prospective creditors with information useful when considering loan requests. Industrial accountants must thoroughly understand accounting theory and have the capability of adapting their knowledge to a particular business. Closely allied to the design of accounting systems is the work of internal auditing. Internal auditors have the responsibility to determine the efficiency of accounting systems, determine if procedural steps are being followed by people working within the system, and to determine the accuracy of financial information.

Industrial accountants engaged in cost accounting collect data to determine or predict the cost of manufacturing a product, or the cost of a manufacturing process. Budgeting is financial planning. Thus, industrial accountants engaged in budgeting use current information to predict future business performance.

Industrial accountants engaged in tax accounting prepare local, state, and federal tax reports. Also, tax accountants spend much of their time involved in tax avoidance; that is, in determining how the tax implications of a particular business decision might be legally minimized.

Governmental Accounting. Accountants are employed by the government to prepare budgets, conduct audits of various governmental agencies, conduct audits of agencies doing business with the government, and verify the accuracy of personal and business income tax reports. In addition, government accountants conduct reviews of financial statements of corporations which offer securities to the public, and act in many additional capacities. Individuals interested in governmental accounting careers may work in the Internal Revenue Service (IRS), Securities and

Exchange Commission (SEC), General Accounting Office (GAO), Defense Contract Audit Agency (DCAA), and the Federal Bureau of Investigation (FBI).

Advancement for professional public accountants can, depending on the individual, be quite rapid. Because of the size of major public accounting firms, growth of public accounting and "promotion from within" policies, there are numerous advancement opportunities. Promotions are a function of acquiring the Certified Professional Accountant (CPA) Certificate, plus various personal traits--all of which are personally controlled.

There are opportunities for advancement in industrial accounting positions. However, these opportunities may be limited by the relatively small number of upper accounting positions within a particular business. Promotions in governmental agencies are subject to civil service requirements, which tend to place time factors on advancement.

The Necessary Education

An individual who desires entry-level employment as an accounting clerk should have a high school diploma. In addition, this person should have studied accounting in his/her high school program, as well as typewriting, business mathematics, office practice and related business courses. If the individual has not studied business while in high school, similar programs are available in community colleges and private business schools.

Advancement to the position of para-professional accountant generally will require advanced accounting study in a community college or private business school. In many businesses, advancement within the accounting department is possible as one gains experience, without the requirement of additional formal education. However, advancement usually is more rapid with additional study.

The para-professional accountant is normally a graduate of a two-year community college program or private business school. An example of two-year accounting programs, leading to the degree Associate in Applied Science or Associate in Science is outlined in Figure 5.⁶ The A.A.S. degree is designed to lead to employment. The A.S. degree is designed for those students who will transfer to four-year college programs.

The professional accountant must possess a college degree. Accounting must be studied on either the undergraduate or graduate level. Also, if one is to progress up the public accounting ladder, the CPA certificate is necessary, thereby indicating professional status in public accounting. Requirements for taking the CPA examination can be obtained by writing the Pennsylvania Institute of Certified Public Accountants.

The CPA certificate is not as necessary for advancement in either industrial or government accounting, as it is in public accounting. However, holders of the CPA certificate are viewed as competent individuals, and consequently are looked on favorably in all accounting fields.

The Future

The following statement appears to summarize the present and projected employment opportunities for accounting clerks:⁸

"Thousands of job openings for bookkeepers are expected every year through 1985. Jobs will be numerous even though bookkeeper employment is expected to grow slowly over the next 10 years or so for the occupation is large and turnover is high. Most job openings for bookkeepers will occur because of the need to replace workers who die, retire, or stop working for other reasons.

Future employment growth in this occupation will be slowed by the increasing use of electronic data processing and various types of bookkeeping machines. Many machines can process data more accurately, rapidly, and economically than workers doing it by hand. Nevertheless, need for bookkeeping workers is expected to outpace the impact of labor saving office machines over the next decade."

ACCOUNTING (A.A.S.)
(Employment)

ACCOUNTING (A.S.)
(Transfer)

First Semester		Cr. Hrs.	First Semester		Cr. Hrs.
English Composition I		3	English Composition		3
History of West. Civilization I, II, or III		3	History of West. Civilization I, II, or III		3
Mathematics		3 or 4	Mathematics		3 or 4
Accounting Principles I		3	Accounting Principles I		3
Business Organization		3	Economics I		2
		<u>15 or 16</u>	Physical Education		<u>17 or 18</u>
Second Semester			Second Semester		
English Composition II		3	English Composition II		3
History of West. Civilization I, II, or III		3	History of West. Civilization I, II, or III		3
Business Mathematics		3	Mathematics		3 or 4
Accounting Principles II		3	Accounting Principles II		3
Business Law		3	Economics II		3
Physical Education		2			<u>15 or 16</u>
		<u>17</u>			
Third Semester			Third Semester		
Business English		3	English or Communicating Arts		3
Social Relations, History, Political Science or Economics		3	Social Relations, History, Political Science, Economics or Business Law		3
Business Elective		3	Intermediate Accounting I		3
Survey of Business Data Processing		3	Lab Science		4
Cost Accounting		3	Statistics I		3
		<u>15</u>	Physical Education		<u>1</u>
Fourth Semester			Fourth Semester		
English or Communicating Arts		3	English or Communicating Arts		3
Social Relations, History, Political Science or Economics		3	Social Relations, History, Political Science, Economics or Business Law		3
Business Elective		3	Intermediate Accounting II		3
Tax Accounting		3	Lab Science		4
Elective		3	Statistics II		3
Physical Education		1			<u>16</u>
		<u>16</u>			

Figure 5

Employment opportunities for the para-professional accountant appear to be on the increase, due to increased business and government activity. The largest increase will come in those positions that are relatively non-repetitive, with automatic equipment increasingly performing routine tasks. In addition, the employability of the para-professional accountant will increase to the degree that this person can intelligently interface with automatic data processing systems. That is, to the degree that the para-professional accountant can create input and understand automated output.

The need for professional accountants will increase as fast as the average for all occupations through the mid-1980s. Increases will come about due to expansion of both business and government agencies. Also, businesses are using the services of professional accountants to a greater extent than in the past, thereby creating additional sources of employment.

More than 865,000 people worked as accountants in 1976, with 51,500 new openings expected through 1985.⁹ About 20 percent of the professional accountants were Certified Public Accountants; and about 4 percent of the CPA's and 24 percent of the accountants were women.¹⁰

Income

The weekly earnings for accounting clerks vary by position, length of employment and by geographical area. Figure 6 summarizes weekly earnings for various classes of accounting clerk employment in four Pennsylvania locations.

The data in Figure 6 summarizes average weekly earnings for experienced employees. To get an idea for beginning salaries in the Accounting Clerk category, the last line includes typical "low" salaries. (It is assumed that the "low salary is paid to a beginning employee.)

To obtain data on the earnings of para-professional accountants, is difficult because of the emerging nature of this class of accounting employee. However, discussions with community college personnel relative to salaries received by their graduates provide some insights. Para-professional accountants begin employment at the accounting clerk level, and thus receive weekly

WEEKLY EARNINGS FOR TYPES OF ACCOUNTING CLERKS¹¹

<u>Position</u>	<u>Average (Mean) Weekly Salary (1/77 - 11/77)</u>			
	<u>Philadelphia</u>	<u>Northeast Pennsylvania</u>	<u>York</u>	<u>Pittsburgh</u>
	(11/77)	(8/77)	(2/77)	(1/77)
Accounting Clerk, A	\$195.50	\$166.50	\$166.50	\$225.00
Accounting Clerk, B	166.50	131.50	131.50	149.50
Bookkeeping Machine Operator, A	174.00	-	152.50	139.50
Bookkeeping Machine Operator, B	140.50	117.00	140.50	134.00
Payroll Clerk	180.50	139.50	149.50	191.50
Typical Low (Beginning) Salaries	110.99 - 120.00	90.00 - 110.00	90.00 - 110.00	90.00 - 110.00

Figure 6

ting clerks. However, advancement can come quickly to the point where para-professional accountants are receiving annual salaries between \$9,000 and \$13,000. The \$13,000 annual salary appears to represent a ceiling that is exceeded only when the individual obtains more training and education.

The salaries earned by professional accountants vary depending upon experience, credentials, and area of employment. Average salary offers

for 1978 graduates of accounting programs were expected to be \$1,122 per month in industry and approximately \$1,100 in public accounting.¹²

Graduates who had superior academic records received the premium offers. The illustration in Figure 7 provides information on the wide range of salaries and employment opportunities for professional accounting graduates.

Personal Traits

Accounting clerks must be accurate, dependable and even-tempered, as well as possessing all the other qualities that make for wholesome personal relationships. To illustrate the need for accuracy, consider the following situations. In business the term GIGO (garbage-in, garbage-out) is frequently used. Literally, GIGO means that you get from an accounting system what you put into the system. If financial information is recorded incorrectly (garbage-in), the paraprofessional or professional accountant will make incorrect (garbage-out) analyses, business decisions, projections, and the like, when engaged in the interpretive phase of accounting.

Consider also the need for dependability if an accounting clerk has sole responsibility for the bi-weekly payroll. The impact on all employees is serious if the payroll is not ready. Finally, the need for an even temper is recognized if one has had the opportunity to speak with an accounts receivable clerk who handles his/her charge account. Obviously, many such conversations are emotion-charged and of the type that require extreme control.

In a recently completed survey, office employers in Philadelphia were asked to rank various interpersonal traits that characterize effective/ineffective office employees.¹⁴ Figure 8 indicates the ten

SALARIES FOR PROFESSIONAL ACCOUNTANTS¹³

<u>Position</u>	<u>APPROXIMATE PAY SCALE - EARLY 70s</u>
<u>PUBLIC ACCOUNTING FIRMS</u>	
National Senior Partners	\$1/2 to 1 - plus Million
Local Managing Partners	\$100 - \$200,000
Partners	\$40 - \$100,000
Managers	\$18 - \$ 35,000
Senior Accountants	\$12 - \$ 20,000
Junior Accountants with MBA	\$11,000 - plus
Junior Accountants with BA or BS	\$10,000 - plus
<u>INDUSTRY</u>	
Vice-Presidents of Finance of: major corporation listed on NY Stock Exchange	\$60 - \$100,000
smaller corporation listed on The Amex	\$40 - \$ 80,000
large closed corporation	\$20 - \$ 60,000
Internal Auditors	\$15 - \$ 25,000
Controllers	2/3 of VP of Finance
Chief Accountants	\$15 - \$ 20,000
Staff Accountants	\$ 9 - \$ 18,000
<u>GOVERNMENT</u>	
Federal Top Administrators	\$25 - \$35,000
District Directors	\$19 - \$25,000
Supervisors	\$12 - \$21,000
Auditors	\$ 8 - \$12,000

Figure 7

most frequently ranked traits. The question posed to employers related to all office employees. The responses appear to apply to accounting clerks.

INTERPERSONAL TRAITS

EFFECTIVE* OFFICE EMPLOYEES (Ranked)

The Office Employee

1. is able to listen to directions and follow through.
2. has an interest in his/her work.
3. has a good attitude toward the job.
4. is willing to learn.
5. has respect for authority and is willing to accept instruction and advice.
6. is willing to adapt to changing conditions.
7. is attendant to details.
8. is able to cooperate with all others.
9. is even tempered--able to cope with rushes and backlog--does not panic.
10. has developed a strong sense of self discipline.

INEFFECTIVE* OFFICE EMPLOYEES (Ranked)

The Office Employee

1. hasn't any interest in job--wants to know the minimum amount of work to do to maintain a job.
2. has a poor attendance and punctuality record.
3. shows a lack of respect for management and/or authority.
4. does not want to think, does work only through habit, needs constant directions.
5. is unable to accept helpful criticism.
6. is abrasive in his/her relations with other employees.
7. is unable to take corrective criticism.
8. is unwilling to help others, i.e., "It isn't in my job description."
9. is unorganized because he/she has not planned the work.
10. is not responsible for his/her work.

FIGURE 8

The para-professional accountant must be accurate and completely at home with figures. In addition, he or she must be comfortable with inside work, and must be able to function under the pressure of work deadlines and possess the tact and diplomacy necessary to deal with co-workers and other contacts.

*A total of 23 "effective" traits were ranked.

**A total of 27 "ineffective" traits were ranked.

Finally, the para-professional accountant will probably need to possess better communication skills than the accounting clerk. That is, the para-professional accountant may have to write reports, proposals, analyses, and the like, and present these documents orally to supervisors and/or employers.

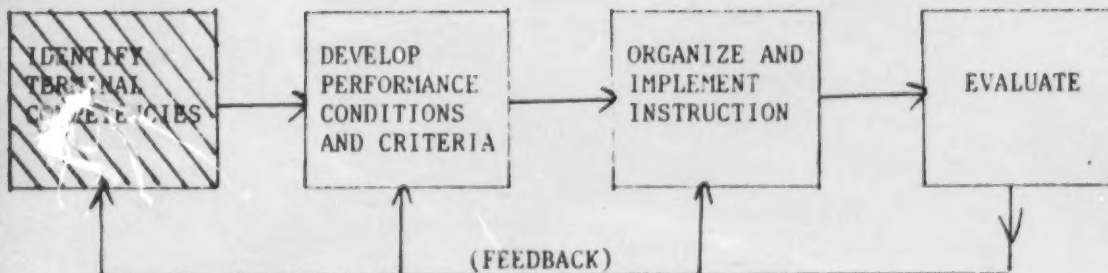
Subsequent comments were made by a professional accountant. "In many accounting positions, there are days of tedious work during the first year or two. Probably the same is true of many other lines of work. You have to walk before you run. . . . If you insist on being an outdoor type all the time, you won't like accounting because you'll have to be in an office a lot. . . . Some accounting positions, like mine, require traveling. Whether this is an advantage or a disadvantage no doubt depends on personal circumstances."¹⁵

Embedded in the above comments are various of the personal qualities that make for success as an accountant. Accounting work is "figure" oriented, consequently, if a student is not completely at home with figures, he/she will not enjoy accounting. Accounting work is inside work, rather than outside work, thereby defining a necessary personal quality. Professional accountants are college-educated, therefore, prospective accountants must desire a college degree. As stated earlier, professional accountants come into contact with people, consequently, perhaps a measure of extroversion is a necessary prerequisite. Certainly, people who dislike conversing or meeting with others will not enjoy functioning as a professional accountant. Thoroughness and a concern for details represent two additional traits necessary for professional accountants. Errors, however small, must be identified and traced to the source.

Finally, professional accountants are, at various times, asked to work long hours. Year-end audits and tax work require long hours through the week, plus weekend obligations, with the resultant disruption of personal and family plans.

Summary and Preview

Chapter 2 was designed to provide the teacher with accounting related career content. It is anticipated that the teacher can use the career materials to present entire lessons, mini-lessons, encourage career discussions, or as enrichment information. In Chapter 3, content is presented useful for developing accounting subsystems instruction, as well as the presentation of advanced accounting topics.



Chapter Three Accounting Content

This chapter contains accounting content that can be used to meet a variety of student needs. Primary emphasis is placed on meeting the needs of students who are vocationally oriented to be accounting clerks. In developing the subsequent content material, careful consideration was given to some of the current research related to secondary level accounting instruction. The purpose for using current research as the basis for developing content is to improve the match between classroom instruction and career needs.

Research and Accounting

For some time, researchers have suggested that there is little agreement between what is being taught and the work of entry-level accounting employees. Comments from two representative studies are found below.

In the Reap Study¹⁶ designed to identify the discrepancy between work and training programs in the area of beginning accounting and book-keeping, the researcher found:

The job tasks of the beginning accounting and bookkeeping worker were more concerned with segments of the accounting cycle than with tasks requiring understanding the whole cycle. Few of the job tasks required understanding of those steps in the cycle past the trial balance....

The tasks covered in the conventional high school accounting and bookkeeping curriculum have no significant relationship to the job tasks necessary for the employment in beginning accounting and bookkeeping occupations. The tasks most extensively covered in the curriculum are those most rarely performed by the beginning worker.

In a survey of bookkeeping job activities in relation to the high school bookkeeping curriculum, the West Study¹⁷ concluded that:

Prevailing high school instruction goes far beyond what employers want from beginning employees and far beyond what beginners need.

Even those with high school training far more often report on-the-job rather than school learning of their job duties, and they consider themselves about halfway between "mostly" and "partly" able to perform their job duties without school training.

More generally, job responsibility and advancement depend heavily on work experience, post-high school education, and general ability--not discernably on high school instruction. Clearly, much of high school instruction is premature, rather than timely, in relation to job advancement.

Transfer of Learning

The comments from the Reap and West studies suggest a need to scrutinize the content presented in accounting classes. The research does not tell business education anything new, but simply reaffirms what former students have been saying for some time, i.e., "What I'm doing at work isn't anything like what you taught me." Students and researchers are saying the same thing--improve the transfer of learning.

Educational psychologists point out that transfer of learning rests on the "common element" theory which suggests "that transfer depends upon the presence of identical elements in the original learning and in the new learning. These may be identities of either substance or procedure."¹⁸ Thus, to accommodate the researchers, educational psychologists, and most important, the students, the emphasis in this chapter

stresses the "common elements"--that which is similar in school and work. Emphasis is placed on an expanded treatment of the accounting subsystems--payroll, cash receipts, cash payments, purchases and sales.

As you review Chapter 3, note the following:

First, the content matter of accounting should be designed to increase transfer of learning. Accounting controls, accounting jobs, and an expanded set of accounting procedures and forms that comprise the accounting subsystems is presented. Thus, emphasis has shifted from instruction on journalizing and posting to include the procedures, forms, and controls that make up the work performed by accounting clerks. For instance, the procedures and forms for ordering merchandise are viewed as being just as important as the procedures and forms used to record the purchase of merchandise.

Second, it is suggested that the entire accounting cycle is presented. However, emphasis is not placed on the end-of-accounting period activities. There is the need to present the "big picture" for young people. An understanding of the importance of subsystem activities cannot be developed unless students can see how particular activities relate to the use of accounting data. Figure 9 depicts the entire accounting cycle. Primary emphasis is placed on steps 1-4. Steps 5-9 must be deemphasized. Figure 10 depicts how the work completed by various accounting clerks, functioning in the accounting subsystems, relates to the use of accounting data. Perhaps Figure 10 stresses the GIGO concept. If an accounting clerk processes bad financial data (garbage in) the result in terms of the use of accounting data must be bad decisions (garbage out).

- Insert Figures 9 and 10 -

Third, no attempt is made in this publication to suggest semester or first- and second-year patterns. That which is presented represents

3-34

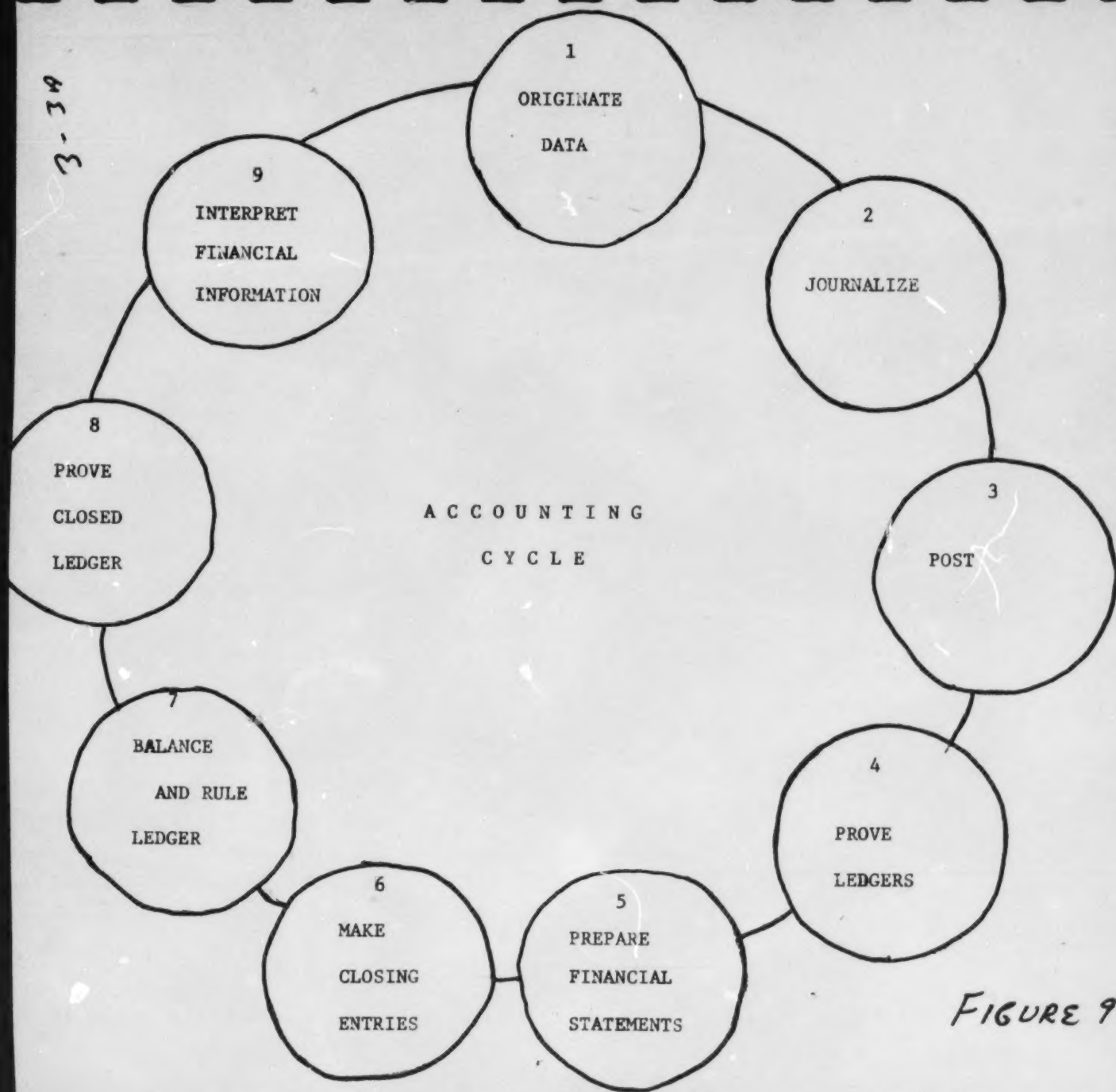


FIGURE 9

RELATIONSHIP OF THE
ACCOUNTING SUBSYSTEMS
TO GENERAL ACCOUNTING

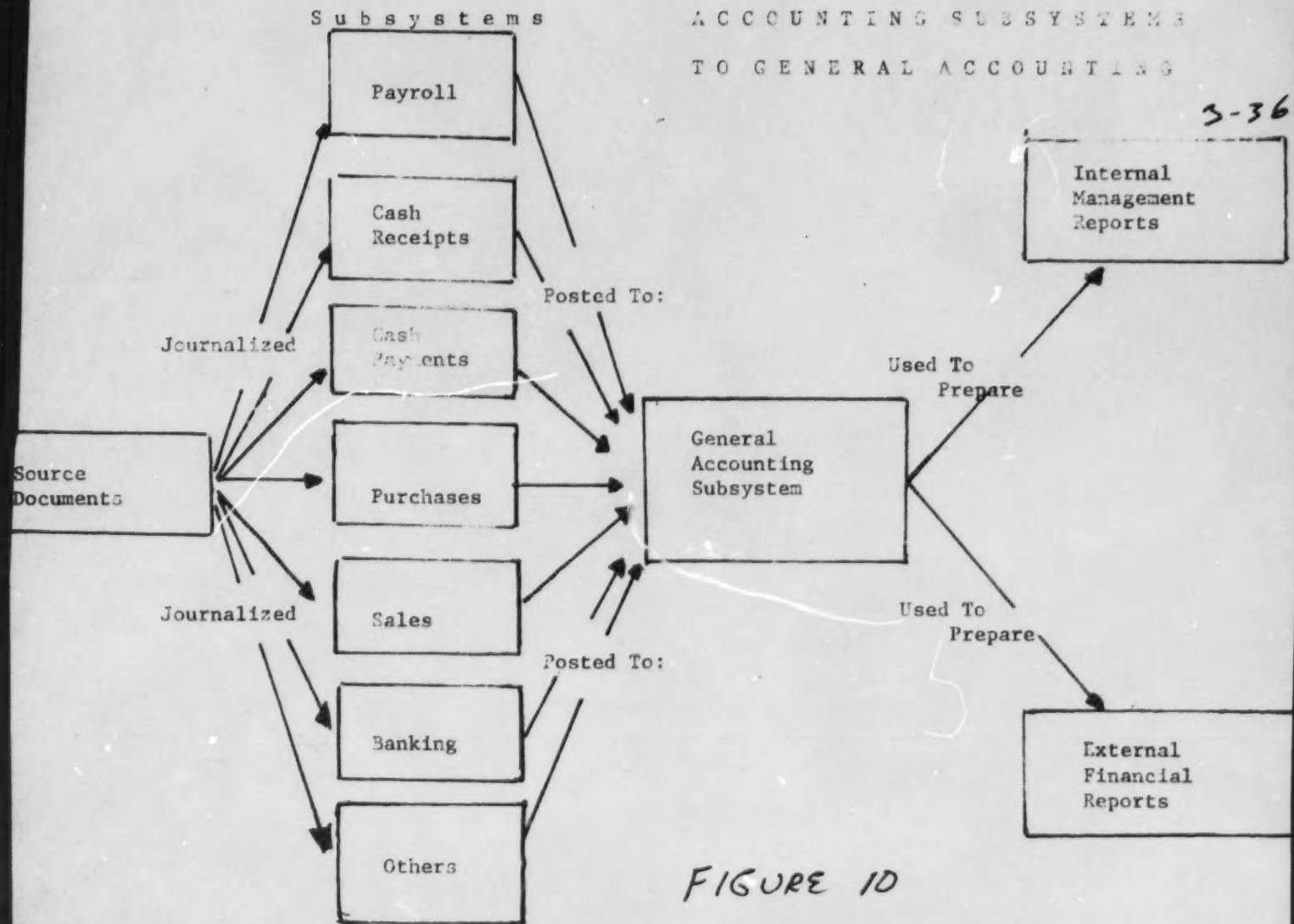


FIGURE 10

potential subject matter. The rationale for not presenting time patterns is that students should be given sufficient time to complete the accounting content necessary to satisfy their career goals. For some students, two years of accounting study might be required to complete the content normally "covered" in the first year of accounting instruction. Other students might have the capability to complete their study of accounting in one semester. The brief comments just offered are discussed more completely in Chapter 4.

The accounting content that follows is organized under four cycles--Elements of Accounting Records, Accounting Subsystems, Financial Accounting, and Managerial Accounting. The Elements of Accounting Records cycle is designed to provide the student with an overview of how business transactions are recorded, classified and summarized. The Accounting Subsystems cycle includes a listing of the topics, procedures and forms necessary to prepare accounting clerks. The Financial Accounting and Managerial Accounting cycles are optional and can be presented, depending on individual career goals.

Cycle 1--Elements of Accounting Records

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Elements and Role of Accounting	Defining Assets, Liabilities and Owner's Equity		The majority of Cycle 1 is designed to present basic knowledge concerning the processing of financial data. Thus, the content relates to all Accounting Clerks/Related Personnel and not to a particular class of accounting employment.
	Preparing and Analyzing the Balance Sheet		
Effect of Business Transactions	Analyzing Asset, Liability and Owner's Equity transactions		
	Analyzing Revenue and Expense transactions		
	Preparing and Analyzing the Income Statement		
Using Accounts	Opening Accounts		
	Recording Changes in Asset, Liability, and Owner's Equity accounts		
Source Documents, Journal and Ledger	Originating and Analyzing Source Documents		
	Recording Journal Entries		
	Posting to the Ledger		
End-of-Period Activities	Proving the Ledger		
	Preparing the Trial Balance		
	Preparing the Worksheet (optional)		
	Preparing the Income Statement and Balance Sheet		
	Closing the Ledger		
	Balancing and Ruling Accounts		
	Preparing the Post-Closing Trial Balance		
	Interpreting Financial Information		

Cycle 2--Accounting Subsystems

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Banking Records	Paying by Check Drawing Checks Processing Checks Depositing Cash Preparing Deposits Stopping Payment Preparing Deposit Tickets Making a Deposit Verifying Cash Balances Verifying Checkbook and Bank Balance Reconciling the Bank Statement Making Reconciliation Entries	Signature Card Check Stub and check Voucher Checks Certified Checks Stop Payment Order Checks Deposit Ticket Signature Card Ledger Card Check Stub Bank Statement Bank Reconciliation Statement Journal	Secretary, DOT 201.268 Stenographer DOT 202.368 General Office Clerk, DOT 219.388
Petty Cash	Establishing and using Petty Cash Journalizing Petty Cash Entries	Petty Cash Voucher Petty Cash Book Journal	
Payroll Accounting	Computing Gross Earnings Determining Gross Earnings Determining Wages Determining Hours Worked Determining Deductions from Gross Wages Determining Federal Income Tax Withholding Determining FICA Determining State Income Tax Determining City Income Tax Determining Other Deductions	Time Card Form W-4 Withholding Tables	Secretary, DOT 210.368 Stenographer, DOT 202.368 General Office Clerk, DOT 219.388 Payroll Clerk, DOT 215.488

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Payroll Accounting (continued)	Processing the Payroll	Payroll Register	
	Completing the Payroll Register		
	Updating the Employees Earnings Records	Employees Earnings Records Journal	
	Recording the Payroll	Journal	
	Determining Employer Payroll Taxes	Journal	
	Paying the Payroll	Voucher Checks Currency Requisition Change Sheet Pay Statement	
	Recording the Payment of the Payroll	Journal	
	Payroll Tax Returns		
	Depositing and Reporting Federal Income Tax	Federal Tax Deposit (Form 501) Journal	
	Withholding and FICA Taxes	Employers Quarterly Federal Tax Return (Form 941) Withholding Tax Statement (W-2) Transmittal of Income and Tax Statement (W-3) Pennsylvania Form (Get number) Journal	
	Deposit and Record State and Federal Unemployment Compensation Taxes	Federal Tax Deposit (Form 508) Pennsylvania Form UC-2 Employers Annual Federal Unemployment Tax Return (Form 940)	

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Cash Receipts Subsystem	Controlling Cash Receipts Creating Source Documents Prenumbering Source Documents Proving Cash Depositing Cash Receipts Intact Dividing Responsibility Recording Cash Receipts Journalizing Cash Receipts Posting Cash Receipts Recording Memorandum and Opening Entries	Cash Register Tapes Sales Slips Remittance Slips Cash Register Tapes Remittance Slips Sales Slips Cash Proof Journal Cash Receipts Journal Cash Receipts Journal Adding Machine Tape Ledger Accounts	Cashier (Office) DOT 211.368 and 211.468
Cash Payments Subsystem	Controlling Cash Payments Verifying and Approving Invoices Paying by Check Prenumbering and Voiding Checks Proving Cash Dividing Responsibility Recording Cash Payments Journalizing Cash Payments Posting Cash Payments Proving Cash Cash Short and Over	Invoices Vouchers Journal Cash Payments Journal Cash Payments Journal Cash Register Tape Ledger Accounts (four and three column) Cash Proof Ledger Accounts Cash Receipts Journal Cash Payments Journal	Cashier (Office) DOT 211.368 and 211.468

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Cash Payments Subsystem (continued)	Verifying the Cash Account and Checkbook	Cash Receipts Journal Cash Payments Journal Check Stub Cash Proof	
	Verifying the Checkbook and Bank Statement	Check Stub Cash Payments Journal Cash Receipts Journal Bank Reconciliation Statement	
Purchases Subsystem	Controlling Purchases Identifying Needed Merchandise Initiating Purchases by Authorized Personnel Prenumbering Source Documents Dividing Responsibility Ordering Merchandise from Approved Suppliers Accepting Merchandise in Authorized Quantities and Quality Verifying Invoices before Making Payment Proving Inventory	(forms listed below for Controlling Purchases)	Purchasing Agent, DOT 162.158 Purchasing Clerk, DOT 223.368 Receiving Clerk, DOT 22.387 Accounts Payable Clerk, DOT 219.488 Accounts Payable Bookkeeper, DOT 210.388
	Ordering Merchandise and Placing Order Determining Needed Merchandise Selecting Supplier Placing the Order	Inventory Cards Request for Quotation Purchase Requisition Purchase Order	
	Receiving the Merchandise Processing Received Merchandise	Purchase Order Inventory Card	
	Accounting for Merchandise Verifying Invoices	Invoice	

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Purchases Subsystem (continued)	Storing the Merchandise Quantity Control	Inventory Sheets Order Form	
	Recording and Posting Purchases Journalizing Cash and Credit Purchases	Cash Payments Journal Journal Purchases Journal	
	Posting Purchases	Purchases Journal Accounts Payable Ledger General Ledger	
	Schedule of Accounts Payable Proving the Subsidiary Ledger	Accounts Payable Ledger Purchases Account Schedule of Accounts Payable Adding Machine Tape	
	Cost of Merchandise Determining Transportation Costs Journalizing Transportation Costs Purchases Returns and Allowances	Cash Payments Journal Cash Receipts Journal Journal Credit Memorandum	
	Payments for Merchandise Determining Data of Payment for Cash/Purchases Discount	Invoice Tickler File	
	Making Payments within the Discount Period	Cash Payments Journal General Ledger Accounts Accounts Payable Ledger	

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Purchases Subsystem (continued)	Posting Cash Payments Posting During the Month	Cash Payments Journal General Ledger Accounts Accounts Payable Ledger	
	Posting at End of Month	Cash Payments Journal General Ledger Accounts Accounts Payable Ledger	
Sales Subsystem	Controlling Sales Filling Customers Orders Promptly Using Prenumbered Forms Verifying Data on Customer's Order Checking Credit before Shipping Merchandise Dividing Responsibility Removing Merchandise in Authorized Quantities Billing Customers for all Merchandise Shipped	(Forms listed below for Controlling Sales)	
	Receiving and Approving Order Taking Orders Preparing Shipping Orders Securing Credit Approval	Purchase Order Shipping Order Shipping Order	Order Clerk, DOT 249.368 Credit Clerk, DOT 249.368
	Packing and Shipping Merchandise Packing Merchandise Shipping Merchandise	Shipping Order	Stock Control Clerk, DOT 223.387
	Billing for Merchandise Preparing Sales Invoices for Monthly and Cycle Billing	Sales Invoices Statements of Account	Billing Clerk, DOT 219.388 Accounts Receivable Clerk, DOT 219.488 Accounts Receivable Bookkeeper, DOT 210.388

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Sales Subsystem (continued)	Recording and Posting Sales Journalizing Sales Posting Sales Schedule of Accounts Receivable Proving the Subsidiary Ledger Sales Taxes Journalizing Sales Taxes Remitting Sales Taxes Net Sales Determining Sales Returns and Allowances Journalizing Sales Returns and Allowances a. Cash b. Credit c. Sales Taxes on Sales Returns and Allowances Delivery Charges Receiving Customer Payments Verifying Sales Discounts Recording Receipts a. Outside Discount Period b. Within Discount Period	Sales Invoice Sales Journal Sales Journal Accounts Receivable Ledger General Ledger Accounts Accounts Receivable Ledger Sales Account Schedule of Accounts Receivable Adding Machine Tape Invoice General Ledger Accounts Cash Payments Journal Tax Remittance Form RSU-3 Cash Proof Cash Receipts Journal Cash Payments Journal Check Stub Credit Memorandum General Ledger Accounts Sales Invoice Cash Receipts Journal	

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Sales Subsystem (continued)	Posting Customer Payments a. During the Month b. End of Month	Cash Receipts Journal General Ledger Accounts Accounts Receivable Ledger	
	Aging Accounts Receivable Preparing a Schedule of Accounts Receivable by Age	Schedule of Accounts Receivable by Age	
	Statement of Account Preparing Statement of Account	Statement of Account	
	Review Data Organization Journalizing Posting	Source Documents Special Journals General Journal General Ledger Subsidiary Ledgers	
General Accounting Subsystem	Proving the Ledgers Proving the Accounts Receivable Ledger Proving the Accounts Payable Ledger Proving the General Ledger	Accounts Receivable Ledger Accounts Payable Ledger Trial Balance	Inventory Clerk, DOT 223.388 Accounting Clerk, DOT 219.488
	Worksheet Determining Adjustments Recording Adjustments on the Worksheet Completing the Worksheet	Inventory Sheets Worksheet Worksheet	Audit Clerk, DOT 210.388
	Financial Statements Preparing the Income Statement Preparing the Schedule of Cost Goods Sold Preparing the balance Sheet Preparing the Statement of Owner's Equity		

Cycle 3--Advanced Accounting Topics--Financial Accounting

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Financial Resources			
a. Current Assets	Classifying Assets Developing a Cash Management Plan Recording Notes Receivable Adjusting Accrued Interest Determining the Relationship between Sales and Bad Debts Recording Bad Debts Expense Recording Accounts Previously Written Off Determining the Cost of Merchandise Inventory Using Alternative Valuation Methods Determining the Cost and Recording Marketable Securities Recording accrued Revenue on Marketable Securities Recording the Sale of Marketable Securities Current Assets and the General Accounting Subsystem	No attempt has been made to list the forms for the advanced cycles (3-4).	The accounting work in Cycle 3 is completed by various para-professional accountants As well as Comptrollers and Financial Analysts.

TopicProceduresForms

b. Long-Lived Assets

Recording the Cost of Plant Assets
Determining Depreciation Using
Alternative Methods

Disposing of Plant Assets

Recording Intangible Assets

Determining Amortization

Recording Amortization

Recording Natural Resources

Determining Depletion

Recording Depletion

Long-Lived Assets and the General
Accounting Subsystem

Financial Obligations

a. Current Liabilities

Classifying Liabilities

Recording Accounts Payable at Gross and
Net Methods

Recording Notes Payable and Accrued Interest

Paying Notes Payable

Recording Accrued Salaries

Recording and Adjusting Deferred Revenue

Current Liabilities and the General
Accounting Subsystem

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
b. Long-Term Liabilities	Recording and Paying Mortgages Payable		
	Recording Bonds Payable		
	Accrued Interest on Bonds Payable		
	Planning the Issue of Bonds Payable		
	Long-Term Liabilities and the General Accounting Subsystem		
c. Contingent Liabilities	Recording Contingent Liabilities		
Accounting for Partnerships	Determining and Recording the Partners' Contributions		
	Determining and Recording the Division of Partnership Net Income		
	Recording the Investments of New Partners		
	Partnership Accounts and the General Accounting Subsystem		
Accounting for Corporations	Developing and Using Corporation Records		
	Accounting for Stockholders' Equity		
	Distributing Net Income to Stockholders		
	Corporation Accounts and the General Accounting Subsystem		
Business Taxes	Identifying Business Taxes		
	Assessing the Impact of Business Taxes on Business		
	Determining the Incidence of Business Taxes		
	Recording Business Taxes		

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Business Taxes (continued)	Planning and Minimizing of Business Taxes		
	Recording Financial Information on the Cash Basis US Accrual Basis		
	Business Taxes and the General Accounting Subsystem		
Interpreting Financial Information (could be presented as separate topics or integrated when presenting current assets long-lived assets, etc.)	Developing and Analyzing Comparative Statements		
	Interpreting Working Capital		
	Interpreting Accounts Receivable		
	Interpreting Merchandise Inventory		
	Interpreting Changes in Financial Position		
	Interpreting Stockholders' Equity		

Cycle 4--Advanced Accounting - Managerial Accounting Topics

<u>Topic</u>	<u>Procedures</u>	<u>Forms</u>	<u>Accounting Clerks/ Related Personnel</u>
Merchandising Business	Developing and Using Departmental Accounting Records		
Multi-store Businesses			
Special Sales	Accounting for C.O.D. Sales, etc.		
Manufacturing Businesses	Developing and Using Cost Accounting Systems		
Process and Job Order Cost Accounting	Using Process and Job Order Cost Systems		
Budgeting	Developing and Using Budgets		
Voucher System	Developing and Using Voucher Systems		

Corrollary Learnings

Secondary level accounting offers the teacher many opportunities to integrate corrolary learnings into their instruction. Economics topics behavior modification activities, career guidance, and personal use activities can be integrated without compromising primary accounting outcomes.

Economics Topics

A partial list of economic topics that might be integrated into accounting instruction includes the

1. economies of large scale production through a discussion of fixed and variable expenses,
2. difference between the accountant's view of net income and the economists' view of profit,
3. effect of business taxes on the economy and business,
4. redistribution of income through income taxes,
5. "socialist" nature of social security,
6. application of the factors of production through financial statement analysis,
7. role of the entrepreneur through a discussion of return on investment (kinds of investment),
8. effect of competition,
9. role of private property,
10. types of business organizations,
11. role of unions and the potential impact of bargaining agreements on net income,
12. banking system,
13. nature of business cycles, and the
14. effects of inflation (common dollar accounting.)

The above list represents a few of many economics topics that might be introduced in accounting. The primary task of the teacher is to recognize when an accounting topic allows for the natural introduction of an economics discussion. The case situation presented in Figure 11 is an example of how an economics discussion on the role of profits, business ownership, economic versus accounting income, and the nature of capitalism might evolve after the preparation of financial statements has been presented.

ACCOUNTING/ECONOMICS CASE

The most recent income statement for the Munoz Supply Company, owned by R. Munoz is illustrated. Using the income statement, plus the additional information given below, you are to determine if R. Munoz's net income is large enough to stay in business or if consideration should be given to selling the business and going to work for someone else.

R. Munoz Supply Company
Income Statement
For Year Ended, December 31, 19--

Sales	\$300,000
Cost of Goods Sold	<u>\$180,000</u>
Gross Profit on Sales	\$120,000
Operating Expenses	<u>\$ 90,000</u>
Net Income	\$ <u>30,000</u>

Additional Information:

1. R. Munoz has been offered \$150,000 for the business.
2. R. Munoz has also been offered a position managing a similar supply company at an annual salary of \$15,000.
3. Assume that R. Munoz's net income has been approximately the same for the past three years and will not change unless additional investments are made.

Behavior Modification

Business teachers are aware of the need to develop appropriate business attitudes. While it is impossible to know if classroom activities change attitudes, accounting teachers can begin to develop class activities that can potentially change (modify) behavior, and thus allow accounting teachers to infer that attitudes have changed.

As a first step in behavior modification, the teacher might try to clarify his/her students' thinking about a particular attitude area. For instance, employee theft of merchandise is a serious problem. Many employees do not think that it matters or that it is not improper to steal merchandise. To clarify that merchandise thefts do matter, the teacher might offer his/her students the case indicated in Figure 12.

DOES IT REALLY MATTER?

Pat George works in the stock room of Velco Electronics, Inc. Early in December a fellow employee saw Pat steal a television set that cost the employer \$120. When the fellow employee asked about the television, Pat replied that Velco has an inventory of at least 80 similar T.V.'s and wouldn't miss one.

What do you think? Does it matter? Will the missing television affect Velco in any way? How?

Figure 12

The discussion that could follow the introduction of the case indicated in Figure 12 could begin to identify various student points-of-view and begin to modify thinking (perhaps not behavior) by introducing peer group influence. After sufficient discussion has been allowed, the teacher might offer the follow-up activity presented in Figure 13.

Below you find the Income Statement for Velco Electronics, Inc.
 Assume that Pat George did not steal the television set costing \$120,
 and re-compute the net income:

Velco Electronics, Inc.	
Income Statement	
For Year Ended, December 31, 19--	
Sales	\$280,000
Cost of Goods Sold:	
Merchandise Inventory, January 1, 19--	36,000
Purchases	<u>163,000</u>
Cost of Merchandise Available for Sale	\$199,000
Deduct: Merchandise Inventory, Dec. 31,	<u>31,000</u>
Cost of Goods Sold	<u>\$168,000</u>
Gross Profit on Sales	\$112,000
Operating Expenses	<u>85,000</u>
Net Income	<u>\$ 27,000</u>

Questions?

1. What is the net income for Veco Electronics, Inc., assuming the television set had not been stolen?
2. Does it matter that a television set was stolen?
Explain.

Figure 13

Completion of the problem in Figure 13 should indicate to the students that at some level--effect on net income--it does matter if merchandise is stolen by employees. The teacher could then follow up the preparation of the new income statement with a discussion of "profit

sharing" or "employee ownership" plans currently being used by many companies.

The steps mentioned above may not be powerful enough to change behavior. Why? Because the students' present behavior and thinking is a product of many, many, experiences. However, the teacher can begin to change behavior by consciously introducing situations similar to that described.

A second illustration of how a teacher could clarify the impact of improper behavior, as a first step for encouraging appropriate behavior, follows.

A worksheet with some trial balance information is shown in Figure 14. Ask students (in complete seriousness) to foot the trial balance, as a first step to completing the worksheet. Before long a student will question you about a figure or an amount. Confess ignorance, stop the class, and have them begin again with the correct figure/amount. Before long a second query will come up. Go through the same process of correcting and beginning again. Before long your students will become angry with you for your "neatness" and "accuracy." Then, and only then, can you begin a discussion on the need for neatness and accuracy, GIGO, and similar attitudes you wish to modify.

INSERT FIGURE 14

NAME _____

Baxter Clothes
Worksheet

3-24

For the Month Ended March 31, 19__

	ACCOUNT TITLE	ACCT. NO.	TRIAL BALANCE		ADJUSTMENTS		ADJUSTED TRIAL BALANCE		INCOME STATEMENT		BALANCE SHEET		
			DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	
1	Cash		8240-										1
2	Accounts Receivable		2875-										2
3	Merchandise Inventory		2653-										3
4	Equipment		2740-										4
5	Prepaid Insurance		540-										5
6	Supplies on Hand		160-										6
7	Accounts Payable		1384-										7
8	Gerald Baxter, Capital			2247-									8
9	Gerald Baxter, Drawing		450-										9
10	Sales			9846-									10
11	Sales Returns and												11
12	Allowances		138-										12
13	Sales Discount			183-									13
14	Purchases		3810-										14
15	Purchases Returns and												15
16	Allowances			87-									16
17	Purchases Discount												17
18	Miscellaneous Expense		80-										18
19	Insurance Expense		90-										19
20	Rent Expense		540-										20
21	Supplies Expense												21
22	Telephone Expense		32-										22
23													23
24													24
25													25
26													26
27													27
28													28
29													29
30													30
31													31
32													32
33													33
34													34
35													35
36													36
37													37

FIGURE 14

Additional strategies for developing proper business attitudes are:

- Strategy 1 - Write and publish objectives in the affective domain. Strategy 1 has the effect of listing for students those business attitudes, traits, etc., the teacher wishes to encourage.
- Strategy 2 - Provide learning experiences that encourage attitude formation. Research has demonstrated that simulations, cooperative experiences, classroom discussions of "business attitude" situations encourage attitude formation.
- Strategy 3 - Set examples or provide examples. Much of what young people learn in school is learned through emulation. Thus, teachers should recognize their role as models for their students. Teachers should also consider the use of resource people (industry representatives, etc.) as models to be emulated, as well as a source of technical information.
- Strategy 4 - Apply learning theory. Attempts should be made to associate positive experiences with desired behavior. Thus, appropriate business attitudes can be encouraged with positive reinforcement activities such as praise, compliments, recognition, and the like.
- Strategy 5 - Keep personal prejudices under control. The degree to which a student internalizes a business attitude is based on the degree to which the particular attitude is included as part of his/her value system. Thus, activities designed to modify attitudes should allow for objective discussion, analysis of pro's and con's and the like. It should be added that it is proper for teachers to have and to express a point-of-view. However, personal points-of-view should be only one of the various inputs in a discussion, and should not be mandated as the "way it is."

Guidance Values

High school graduates considering the study of accounting or business administration in college could benefit from a secondary level "tryout" experience. However, if the secondary level experience is to be valuable and if it is to provide insights concerning the nature of college level accounting, certain modifications of objectives might be necessary.

There are numerous college level accounting instructors who discourage the study of secondary level accounting. The reasons vary; however, the primary concern appears to be that the orientation of secondary level accounting instruction is on the mechanics of recording financial information. The recording emphasis at the secondary level is contrasted with a theory emphasis at the college level. The "how" orientation tends to give secondary level students a false notion of what to expect at the college level. The direct result is that the secondary level experience often becomes a detriment to college success.

To assess the validity of the perceptions offered above is difficult. A more fruitful approach might be to accept the concerns as valid and use the "common element" theory to bring secondary level accounting objectives in line with college level requirements. On pages 30 and 31 you find selected objectives for the first semester of college level accounting.¹⁹ A review of the objectives quickly reveals many verbs that describe high level cognitive processes. The conclusion can be reached that college level accounting instruction is primarily concerned with the ability to analyze, summarize, contrast and the like. Thus, secondary level instructors who wish to ensure a valid accounting "tryout"

experience should orient their instruction to yield the kinds of outcomes sought at the college level.

The first step for orienting secondary level instruction to yield college level outcomes would be to obtain a complete set of objectives for introductory, college accounting. A complete list could be obtained by reviewing Battista's dissertation. The list could then be validated by submission to local college accounting faculty. A second choice would be to obtain a complete list directly from a local college accounting faculty. After obtaining a list of valid objectives for college level accounting, the systems approach described in the present syllabus could be used to derive appropriate instruction and a meaningful, valid "tryout" experience.

A partial listing of behavioral objectives for Introductory Accounting I offered in 2- and 4-year collegiate programs includes:

1. Differentiates between meaning of such terms as business entity and legal entity.
2. Identifies the best classification of an asset, liability, equity, revenue or expense when given a list of descriptive items.
3. States in writing why cost is generally used in accounting for most assets.
4. Interprets transactions displayed in "T" accounts by indicating for each transaction the type of accounts affected (assets, liability, etc.) and whether the accounts were increased or decreased.
5. Rearranges a list of procedures into a logical sequence of the flow of accounting information through a business.
6. Determines the effect of a list of errors on the totals in a trial balance.
7. Analyzes descriptive data and prepares adjusting entries for (1) asset costs expired, (2) deferred revenues earned, (3) accrued expenses incurred and/or (4) accrued revenue earned.
8. Prepares 10 column worksheet utilizing data from an appropriate trial balance and adjustment data and uses the worksheet to prepare an income statement and balance sheet.

9. Explains in writing the difference between and the characteristics of accrual basis and cash basis of accounting.
10. Identifies in a multiple choice question the dual role of the ending inventory on the financial statements of a merchandising enterprise.

Another suggestion for improving the secondary level guidance experience would be to integrate various college level experiences. For instance, the secondary level instructor could have students audit the work of classmates, present problems or projects that are open-ended (have no "key"), require library research, or introduce analysis activities (working capital, merchandise turnover, debt/equity ratios, etc.).

Role of Data Processing Instruction

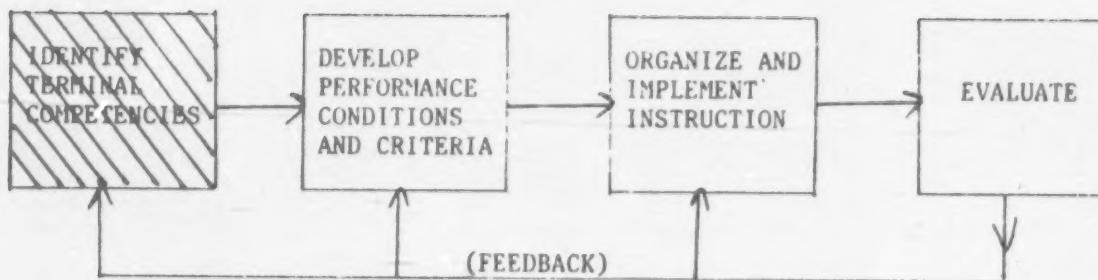
The processing of financial information is becoming increasingly automated. While it is true that automated accounting systems do not affect accounting theory, it is also true that manual systems are changed materially through the use of data processing equipment. Thus, the traditional role of bookkeeper also is changing.

The typical statements one sees regarding the introduction of data processing in accounting classes indicate that students should have an "appreciation" of data processing. The problem is that we do not know what quantity or quality of experience is necessary to have an "appreciation." Certainly the data processing cycle (Originate/Input/Manipulate/Output) should be contrasted with the traditional accounting cycle. In addition, students should know that many manual accounting steps are performed automatically by various pieces of equipment. And finally, the role of people in an automated system should be compared to the role of people in a traditional system.

To enable the accounting instructor to move beyond the above comments, a series of five exemplary programs presently operating in Pennsylvania, are described. Each program integrates data processing with accounting instruction. The difference between the programs is one of degree. By reviewing the level of integration in a variety of schools, it is anticipated that each accounting instructor/business education department will choose a degree of integration suitable for its students, employing community, and available resources

Insert 5 Exemplary Programs - Figures 15-19

Summary and Preview Chapters 2 and 3 focused on the content and career experiences that might be introduced in secondary level accounting. Chapter 4 is focused on the organization, methods and resources that will, hopefully, yield effective instruction.



Chapter Four Organization, Resources and Methods

This chapter is designed to provide discussion that will enable young people to learn that which was presented in Chapters 2 and 3. Primary emphasis is on the organizational patterns, learning resources, and methods for effective accounting instruction. The conceptual framework of this chapter is the mastery learning concept. Mastery learning is a way of viewing the learning potential of young people and suggests that most of those who enroll in accounting can learn what will be taught to them. Bloom²⁰ states that:

Most students (perhaps over 90 percent) can master what we have to teach them, and it is the task of instruction to find the means which will enable our students to master the subject matter under consideration. Our basic task is to determine what we mean by mastery of the subject and to search for the methods and materials which will enable the largest proportion of our students to attain such mastery.

Thus, the intent of this chapter is to place methods and materials in a context that will contribute to accounting mastery. A reading of Bloom's thinking reveals three important statements about learning if "mastery" is to take place.

First, students vary in their aptitude for learning a particular subject. The key word in the first statement is aptitude. All (90-95 percent) students can learn accounting, but it takes some students longer than others. Thus, the significant variable is time, not capacity.

Second, the rate of learning is affected by the methods and materials of instruction used by the teacher. That is, the student's abilities interact with the methods and materials of instruction and the teacher's abilities to affect the rate of learning.

Third, the learning environment must be such that individual students are encouraged to persevere in their learning of accounting. Mastery learning is not automatic. There appears to be a shared responsibility between teacher and student necessary for learning to take place. However, the teacher has the primary responsibility for creating the optimum learning environment.

Organizational Patterns

The organizational patterns available to accounting teachers include three grouping sizes: large, small (2-4 students), and individual (one to one). Teachers also can choose from flexible time frames (self-paced), definite periods of time allotted for instruction (group-paced), open labs, or teacher-monitored instruction.

Available research does not appear to indicate that any single organizational pattern is clearly superior, because no single pattern meets the needs of every student. Thus, when choosing an organizational

pattern, the teacher should recognize that the choice is predicated on what is best for that student at that time. The "best" organizational pattern is one that allows students the option of pattern choice, which might change from one to another unit of instruction. In practice, the choice of organizational pattern normally comes down to group- or self-paced instruction.

Group-Paced Instruction

Accounting teachers using group-paced instruction do so out of habit, administrative considerations, or lack of alternatives. The primary difficulty with group-paced instruction is that the pace is probably too slow for some students and too fast for others. Thus, accounting teachers utilizing a group-paced mode should consider enriching instruction with small group instruction, audio and visual materials, job sheets, learning packets, tutors, open labs, and the like, or risk ignoring the 90+ percent success possibility of mastery learning.

Self-Paced Instruction

Self-paced (teacher monitored) instruction is becoming increasingly popular. Teachers are developing learning packets and job sheets and using commercially prepared learning guides as the primary vehicle for delivering instruction. Teachers using self-paced instruction also should consider enriching instruction with large and small group activities. No single organizational pattern has proven superior, however, some research indicates that high level cognitive outcomes (ability to analyze, contrast, make judgements, etc.) are developed better in large group instruction than in self-paced instruction. Research findings also

suggest that the interaction with peers in large group instruction appears to yield better interpersonal relationship outcomes than does self-paced instruction.

A self-paced (open-lab) also should be considered. An open lab is an instructional area where students work on different lessons in a program, or on different programs. A completely open lab allows students freedom to choose when he/she visits the lab, and to come and go as they please. Instruction is delivered through audio and visual media, with students working towards clearly specified competencies. Thus, the responsibility for learning is clearly on the student's shoulders.

While open lab instruction is effective for some students, it must be pointed out, within the context of mastery learning, that some students will not receive the blend of large and small group instruction necessary for optimum learning. Thus, some schools provide large group instruction, as well as open lab instruction, to accommodate all students.

Flexible Time Frames

One of the bases on which mastery learning operates is the notion of time as the important variable. It takes certain students longer (or shorter) periods of time to learn than others. As suggested earlier, the time variable can be affected with the inclusion of methods-and materials-enriched instruction. However, irrespective of a teacher's best efforts, some students take longer than 180 days to "master" what is traditionally considered Accounting I. Thus, there is the need to begin thinking of allowing students the amount of time necessary to complete the accounting content to be an accounting clerk, secretary, etc. That is, two years, one and one-half years, or some other time period may be necessary for some students to complete what has been described as Accounting I.

Before introducing flexible time frames or self-paced instruction, the accounting teacher should be aware of the following kinds of considerations. First, an accounting class of 25 could have, conceivably, students at 25 different points in the course. Thus, recordkeeping becomes a potential problem. Second, self-paced instruction requires the use of self-instructional materials that must be developed or purchased. The development of self-instructional materials can be time consuming.

Third, the traditional role of the teacher would necessarily change to someone who orchestrates and manages this new, flexible, system. A fourth consideration could be the notion of open entry/open exit. That is, students might enter accounting instruction at some time other than September and finish at a time other than June. Fifth, the accounting teacher would probably make extensive use of student assistants in a flexible time frame to answer the myriad of questions arising from students at different points in the course.

The awarding of grades might be a sixth consideration in a flexible time frame. It would appear that grades would be awarded upon completing predetermined criteria, irrespective of when the criteria were completed. Additional considerations might relate to the nature of both the students and the teacher. Not every student can function in self-paced instruction. Frankly, some students need the structure of group-paced instruction. Similarly, not every teacher is at a maximum effectiveness in a self-paced format and might, if forced to adopt the approach, achieve poorer results than in group-paced instruction.

Learning Resources

There are numerous learning resources available to improve teaching/learning in accounting. In reviewing the subsequent resources, keep in mind that this is an attempt to "search for the methods and materials which will enable the largest proportion of our students to attain such mastery." Thus, each resource and activity must be selected because it possesses the potential to improve teaching/learning.

Textbooks

The choice of an accounting textbook is an important decision to make. Beyond such textbook characteristics as strength of binding, etc., the accounting teacher must seek a text that complements the goals of both teacher and student. Thus, when choosing a text be concerned with:

1. an organizational approach that emphasizes the relationship (WHY) between accounting elements--assets, liabilities, and owner's equity--rather than the recording (HOW) of financial information.
2. a complete treatment of the accounting subsystems, as described in Chapter 3.
3. short learning units and continuous reinforcement activities that encourage the reading of text material.
4. color that is used to highlight and emphasize concepts, ideas, and the accounting content.
5. illustrations that represent the "real world."
6. a systems approach that allows the teacher and student to see how data is originated and ultimately used.
7. a text that is readable. Items that make a text readable include

- a. carefully controlled vocabulary and sentence length,
 - b. the use of color to emphasize ideas and relationships (opposed to the cosmetic use of color),
 - c. marginal definitions and summaries,
 - d. a writing style that is interesting to read,
 - e. the use of context questions that establish a purpose for reading.
 - f. the use of reinforcement and feedback activities that are close (contiguous) to the point of reading, and
 - g. short learning units that can be mastered before proceeding to the next unit.
8. The availability of correlated workbooks, self-paced learning guides, practice sets, simulations, progress tests, transparencies, and the like.

Accounting Applications

Accounting applications--projects, practice sets and simulations--are used to review, integrate, and evaluate accounting teaching/learning. Accounting applications are similar in that each is designed to provide a realistic, job-oriented, experience for the accounting student. Accounting applications are dissimilar in the scope of the application and the opportunity for interaction among students. Typically, projects are short duration, single concept, activities, e.g., a payroll project; while practice sets and simulations cover a much larger range of accounting activities. Also, projects and practice sets are typically administered on a one-student, one-project or set basis; while simulations require the cooperation of a number of students for successful completion. Thus, simulations appear to possess the capacity for dealing with interpersonal relations better than projects or practice sets. Additional

discussion on the role and use of practice sets and simulations is presented below.

Practice sets are used to review, integrate (bring together) and evaluate accounting instruction. Suggestions for the successful use of practice sets include:

1. The practice set should first be worked (or previewed in detail) by the teacher.
2. Allow the class to familiarize itself with the practice set before actual work is started.
3. Lead the entire class through the preliminary instructions and the first "round" of transactions. Gradually place additional responsibilities on each student.
4. Require the use of available adding/listing machines.
5. Do not allow students to waste time waiting for an adding/listing machine that is currently being used. Students can work around material that should be added on a machine until that machine is available.
6. Students should not be given the answers, as such, to their questions. A better approach would be to reflect the questions back on the student in the form of a "leading question;" to enable the student to answer his/her own question.
7. Allow students to talk freely, when the nature of such talk is of the helping nature frequently found in an office situation; that is, talk designed to give assistance on an accounting procedure should be encouraged.
8. Do not give students access to the "key."
9. Impress on students the importance of following, in detail, the instructions. Encourage students to "check off" instructions as they are completed.
10. Enumerate transaction numbers that are particularly difficult and in need of careful analysis.
11. Allow better students to act as assistant teachers.
12. Impress on students the need for neatness and accuracy in all phases of their work.

The above items (1-12) are useful suggestions, but do not capture the excitement potential when practice sets are used as learning activities. Creative teachers have combined parts of different practice sets, and thus, have developed individualized sets. The combining of practice sets also allows for peer instruction on accounting procedures, and peer auditing of partially completed/completed sets. Other teachers have included Federal income taxes as part of practice set activities.

Teachers have also "automated" the payroll, accounts receivable, and other segments of their sets. Another suggestion for realizing the potential in practice sets would include analyzing items on the balance sheet and income statement, e.g., accounts receivable and merchandise inventory turnover, return on investment, and various ratios. Teachers could also develop "open ended" practice sets, whereby the student would be given a choice as to depreciation method, recording an expenditure as a capital or revenue item, and the procedure for handling a payment received outside the discount period.

Simulations are being used in business education to bridge the gap between school and work by adding realism to instruction. Thus, the quality of any simulation is judged by the realism it adds to the learning experience. To this time, the ultimate in accounting simulations has been the practice set. However, accounting teachers are beginning to adapt office simulations to accounting classes or adopt commercially prepared accounting simulations.²¹ To be of maximum effectiveness, an accounting simulation should enable students to

1. apply accounting instruction in a business atmosphere;
2. acquire insights about accounting careers, through the performance of accounting tasks;

3. identify how accounting jobs are interrelated and interdependent;
4. analyze how the subdivision of accounting tasks ensures accuracy, honesty, efficiency and speed;
5. appreciate how the activities performed in each accounting subsystem contribute to the preparation of financial reports used by management and outsiders; and
6. identify and appreciate the need for developing interpersonal skills, e.g., cooperation and dependability, as a prerequisite for vocational success.

Transparencies

The overhead projector can be unusually effective resource for improving teaching/learning in accounting. Transparencies can be used by the teacher and/or the student to preview discussions; introduce principles, ideas, and concepts; demonstrate accounting procedures and the completion of various forms; illustrate work flow; review discussions; provide models of completed assignments; list instructions and project short quizzes.

Self-paced Learning Guides

Self-paced accounting instruction requires the teacher to prepare²² of acquire²³ self-paced learning guides (job sheets, learning packets, etc.) for students. Regardless of the source, a self-paced learning guide should include:²⁴

1. the title of the topic presented in the guide;
2. objectives written in a form easily read by the student;
3. a list of necessary materials;
4. student activities, e.g., reading, viewing, listening and doing;

5. self tests as a means of building student confidence;
6. recycling activities;
7. performance tests that are evaluated by the teacher; and
8. recycling activities.

It should be noted that success when using self-paced learning guides is dependent, to a large degree, on the students' reading ability. Thus, teachers using self-paced learning guides will often put items 1-8 (above) on cassette tapes and make the tapes available as an alternative delivery medium.

Chalkboard

The accounting instructor is aware of the value of a carefully developed chalkboard illustration. Criteria for an effective illustration include the following:²⁵

1. All necessary materials are assembled before class.
2. Illustrations are drawn before class and concealed before introduced in the lesson (where appropriate).
3. Illustrations are clear and legible.
4. Illustrations are shown step-by-step.
5. Shading and coloring are used, when appropriate.
6. All students can see illustrations and writing.
7. Students are allowed time to copy illustrations or writing, when appropriate.
8. Writing area is neat and orderly.
9. Illustrations and writing are appropriate.
10. Students utilize writing and illustrations to summarize.
11. Teacher talks with students while writing.
12. Teacher involves students in using material on chalkboard

In addition to the above, accounting teachers have improved chalkboard illustrations with the inclusion of:

1. permanent and semi-permanent (wet chalk) chalkboard rulings;
2. cardboard headings (e.g., the worksheet);
3. chalkboard rulers;
4. chalkboard masks; and
5. chalkboard stencils.

Equipment and Facilities

The equipment and facilities that might be found in an accounting classroom include:

1. an overhead projector and a suitably mounted, large, projection screen;
2. sufficient filing cabinets to store progress records, accounting applications, career materials, and the like;
3. desks that provide large, functional, work areas;
4. large chalkboard areas;
5. large corkboard areas;
6. multiple adding-listing machines so students might begin developing the habit of leaving "audit tracks," and
7. programmable computers.

The equipment and facilities listed above are necessary for effective instruction. Room dimensions, desk sizes, and the like, may be found by referring to The Business Education Curriculum, Bureau of Vocational Education, Pennsylvania Department of Education, 1974.²⁶

Guest Speakers

Guest speakers can complement the teacher's activities by bringing the employment community to the school. The choice of guest speaker

could include an accountant, accounting supervisor or an accounting employee. The primary concern of the teacher is that both the guest speaker and accounting students are oriented so that a positive learning experience results. A check list for using guest speakers (resource people) is duplicated below.²⁷

When Utilizing a Resource Person, the teacher should:

1. select a Resource Person with the kind of qualities that can complement classroom instruction.
2. obtain permission to use the Resource Person from the administration.
3. familiarize the class with the Resource Person's background and objectives to be achieved.
4. orient the Resource Person.
5. develop questions that can be passed to the Resource Person.
6. assist the Resource Person by developing materials of instruction, obtaining A-V equipment, and the like.
7. develop with the class activities that must be completed prior to, during, and after the presentation.
8. develop with the class standards of behavior that must be present during the presentation.
9. arrange to have the Resource Person greeted, introduced, and thanked.
10. monitor classroom behavior during the presentation.
11. monitor a question-answer session (if applicable) and the time allotted to the presentation.
12. conduct follow-up sessions designed to summarize the presentation, reconcile and integrate presentation content with classroom content, and evaluate the presentation.

Field Trips

A field trip can be an excellent technique for improving the effectiveness of teaching-learning. However, just as with any technique utilized by the teacher, the possible benefits of field trips are not automatic. Careful planning is necessary. The listing found below describes some of the items that should be considered when planning, conducting and evaluating field trips.²⁸

1. Explain, in writing, the details of the field trip to the principal. Most important, you should describe how the field trip will complement classroom instruction.
2. Coordinate the details of the field trip with someone in authority at the place of the field trip. Discussion items would include the number of students involved, time allotments, purpose of the field trip, and what your class is most interested in seeing. If possible, you should visit the field trip site before taking your entire class.
3. Preview the field trip with the class. Ask your class to formulate objectives for the field trip. Include your class in planning the itinerary. Describe what the class might look for during the field trip. If necessary, plant questions that might be asked.
4. Inform parents of the purpose of the field trip and obtain the necessary permission and/or release forms.
5. Develop a list of the students involved with the field trip and distribute this list to the involved students other classes.
6. Arrange transportation. Generally speaking, all students go and come from the field trip by the same means of transportation.
7. Follow up the field trip with a discussion. Either have the students develop post-trip feedback sessions or develop these sessions yourself. Under no circumstances should you neglect the post-field trip evaluation.
8. Write a letter of thanks to the business or institution visited. Additional letters of thanks to the principal might be appropriate.
9. If possible, publicize your field trip through the school newspaper or community newspaper.

Audiotutorial Modules

As an alternative method for delivering accounting instruction, teachers have developed or purchased slide/sound or filmstrip/sound presentations. These mediated materials are self-instructional, and thus, are valuable for home-bound instruction, students who are working ahead or students who are "catching up."

Teaching Style

Two points are necessary to place a discussion on teaching style in perspective. First, the students' and teacher's abilities interact to produce learning; and second, the optimum organizational pattern appears to include a blend of large and small group instruction. Thus, suggestions that improve the teacher's abilities during large group instruction have the potential for improving teaching/learning. The following "teaching style" comments are designed to improve the quality of interaction between students and teachers during discussion-oriented, large-group sessions.

When conducting a large-group session, the teacher has some choices as to how the session might be conducted. The teacher can adopt a "telling style" which converts to a traditional lecture. When using the "telling style," the teacher makes all the decisions concerning what, where, when, and how accounting content is taught. The student is a receiver of information. On the positive side, the "telling style" or lecture method appears to be best suited for dispensing information in a relatively short period of time. On the negative side, the "telling style" does not allow the student much opportunity to make decisions about instruction, and thus, deprives students of the opportunity to learn how to think by depriving students of the opportunity to think.

As an alternative to the "telling style," the teacher can adopt a style that allows the students to make some of the what, where, when, and how decisions. Two techniques that provide for greater student decision-making are guided discovery and problem solving. Each is discussed below.

Guided Discovery

Guided discovery is a teaching/learning technique whereby the teacher leads (guides) the students through a discussion until the student discovers the teacher's focus. The student is presented with questions or clues so arranged that a series of small discoveries leads to the discovery of a major concept. The teacher decides what is to be learned--the student supplies the subject matter details.

The primary advantage for the guided discovery method is that cognitive responses are made by the students not frequently found in other teaching/learning methods, i.e., discovering, inventing, inquiring, hypothesizing, drawing conclusions, comparing and contrasting, synthesizing and analyzing. The guided discovery method lends itself to situations where relationships, structure, principles, attitudes, or the like are best developed by discussing rather than by telling. However, guided discovery is not "open ended," the focus is always in the teacher's mind (preplanned.)

Teachers can assess their guided discovery technique if they can respond "yes" to the following questions. Did I

1. establish a relaxed atmosphere?
2. present provocative questions?
3. ask a series of questions, leading progressively to the focus for the lesson?

4. avoid declarative statements?
5. avoid supplying the answers to my questions?
6. show patience and wait for the students' replies?
7. accept all responses and provide reinforcement?
8. re-direct the discussion when necessary?

Guided discovery appears to be ideally suited to accounting instruction. For instance, the relationship between the balance sheet and income statement could be "discovered;" the differences between manual and automated systems for processing data could be "discovered;" alternative depreciation methods could be "discovered;" and so forth. The primary value for guided discovery is that each question posed by the teacher provides students with the opportunity to think; and, discovery of an important concept or relationship provides students with the feeling of being a part of the teaching/learning process.²⁹

Problem Solving

Problem solving is an approach used by accounting teachers to arrive at a suitable solution to a problem. In problem solving, the problem is either determined by students or presented to the students by the teacher. Students then offer possible solutions to the problem, which are accepted by the teacher without evaluation. Following the offering of possible solutions, each solution is then tested for feasibility as a means of arriving at a "best" solution. The students' best solution may be a "textbook" solution or may be one that the teacher will adapt to make it a textbook solution. The key to problem solving, as with guided discovery, is the incidence of decision-making (thinking). Students are making decisions and thus are involved in their learning.

The steps for completing a problem solving lesson are found below:

1. Teacher places students in a problem situation they do not know how to handle.
2. Teacher solicits from students and accepts all possible problem solutions without comment and records them.
3. Teacher has students analyze and select from the list those solutions which are feasible.
4. Teacher guides students into situation in which students select the more or most desirable solution(s).
5. Students test the desirable solution(s) and come to a conclusion as to which one is best.

The management case found in Figure 15 is an example of a problem solving activity that might be used in an accounting class.³⁰

MANAGEMENT CASE

The Linen and Towel Service owns a truck that it uses for picking up and delivering laundry. Last year, the truck traveled 45,000 miles and made 27,150 stops. Operating expenses were as follows: fuel, \$2,050; repairs, \$1,250; depreciation, \$1,560; insurance, \$480; license, \$540; and driver's salary, \$10,800. M. A. Olson, the owner, is thinking of selling the truck and either leasing a truck from the U-Drive Company or using the Rapid Delivery Service.

The U-Drive Company charges \$270 per month for the truck. In addition to the monthly charge, the Linen and Towel Service must pay for the fuel, insurance, storage, and driver's salary. The U-Drive Company pays for repairs and the license.

The Rapid Delivery Service will pick up and deliver the laundry in each area once daily, at 60 cents a stop.

- a. What decision would you make regarding the truck?
- b. Are there other factors that should be considered besides the cost?

Figure 20

Learning Principles

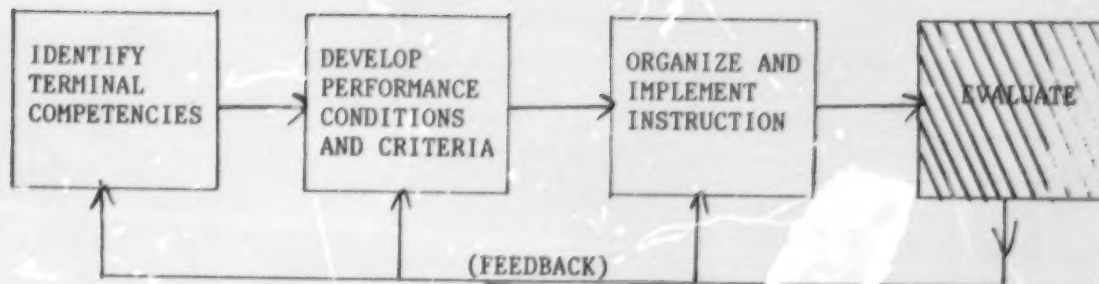
The effective accounting instructor understands how students learn. Educational psychologists have defined certain learning principles. Abstracted below are seven learning principles that appear to apply to accounting instruction.³¹ It appears that awareness and introduction of each learning principle into accounting instruction has the capacity to improve teaching/learning.

- Principle 1 The learner must perceive what is to be learned as relevant, e.g., accounting instruction leads to accounting careers.
- Principle 2 Learning results from the learner's interaction with his or her total environment, e.g., accounting instruction is more effective when related to the students' in-school and out-of-school experiences.
- Principle 3 Learning is facilitated when the learner can associate new behaviors with previously learned behavior, e.g., early mastery of the "matching concept" will make it easier for students to learn depreciation, bad debts, etc.
- Principle 4 Learning proceeds more effectively when the learner is an active participant in the learning process, e.g., case studies, problem solving, guided discovery, and simulation activities have the potential to increase student involvement.
- Principle 5 Learning is more effective when the learner knows the immediate goal to be met, e.g., students should know what competencies (both cognitive and affective) are required at the outset of instruction.
- Principle 6 Learning proceeds faster when the learner is aware of the progress made toward the stated goal, e.g., accounting students should have constant and immediate feedback as a means of reinforcing and validating learning.

Principle 7 Learning proceeds more effectively when the learner participates in a continuously expanding pattern of behaviors, e.g., the "why" of accounting should be mastered before the "how" of accounting

Summary

Chapters 1-4 have provided information concerning what might be included in accounting instruction (curriculum) and suggestions on materials, methods, and organization (instruction). Chapter 5 presents the last step in the systems approach--evaluation.



CHAPTER 5--EVALUATION

Evaluation is the fourth step in the systems approach for developing accounting instruction. Discussion in Chapter 5 is directed at those measures that can be used by the teacher to determine how well the system is working. Discussion is also included on how the accounting teacher might use the students' activities to derive grades.

EVALUATION AS WORTH DETERMINATION

The purpose for evaluation is to determine how well the system is working. Thus, if the question is posed, "What is being evaluated?" the answer would be, "The system." Chapters 1-4 centered on how a teacher moves from the development of competencies to classroom instruction. Now, it is important to discuss procedures designed to determine if the system is working. That is, do the various teaching/learning activities bring accounting students to the point of competence. To evaluate the system, two types of evaluation measures are used: the first is designed to monitor how well the system is operating and to improve (if necessary) the sequence; the second is designed to determine if students possess terminal competencies.

Monitoring the System

The daily teaching/learning activities should lead students, progressively, to the development of terminal competencies. To determine if the system is operating effectively, to see if it is "on target," the teacher might question the students on their knowledge of accounting terminology or test them in some manner on their ability to perform the component skills that will eventually add to competence. For instance, en route to a terminal competency related to posting from a special journal to general and subsidiary ledgers, the teacher must know if students understand posting reference numbers; double posting; the effect of omitting subsidiary ledger/general ledger postings; the mechanics of posting to subsidiary ledgers; appropriate terms; and the like. Dependent on the results of the teacher's formal and informal activities, the system would be modified to yield competence on the component skills or left alone because the system is properly functioning.

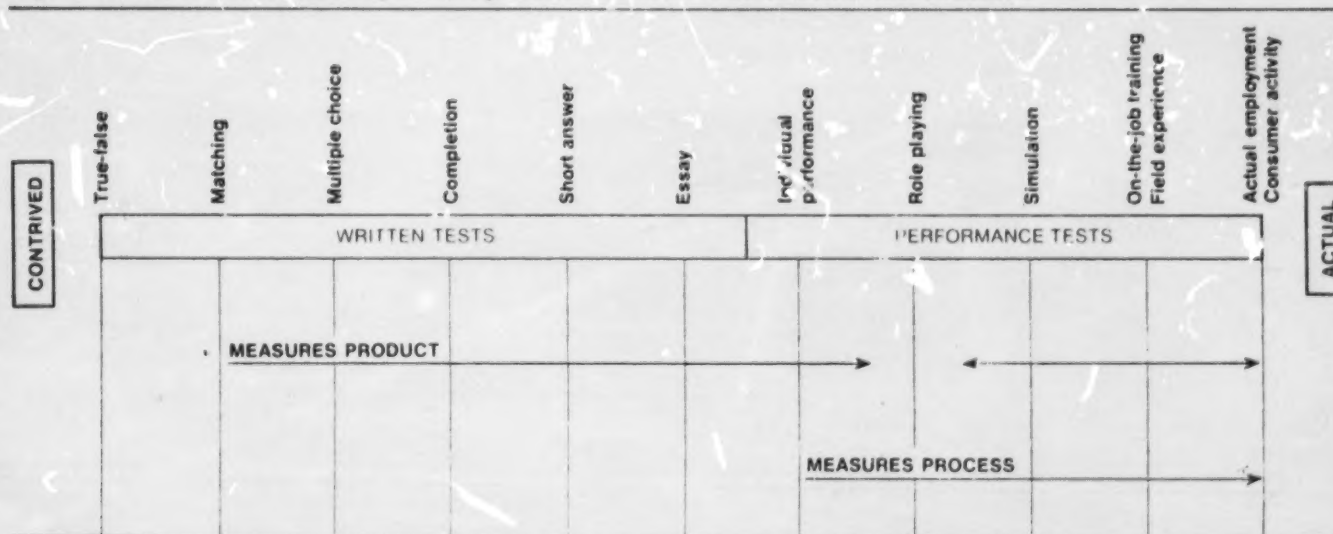
Evaluating Terminal Competencies

The ultimate concern in accounting is to determine how well students perform. Performance can be measured by problem tests, practice sets, simulations, cooperative work experience, and observation instruments.

It should be noted that only problem tests are mentioned as suitable for measuring performance. Popham, Schrag, and Blockhus³² provide some graphic information concerning the appropriateness or "power" of various kinds of tests. Figure 16 indicates that certain tests have the capacity to measure performance (individual performance-actual employments tests) and certain tests do not have the capacity to measure performance (true/false-essay tests).

Insert Figure 21

Figure 4.1 Continuum reflecting the progression from contrived to actual test situations



Developed with the aid of Carl J. Olson, Educational Consultant, Educational Foundation, American Society for Plastic and Reconstructive Surgery.

FIGURE 21

Problem Tests An accounting test that requires students to record, post, prepare, analyze, contrast two procedures, demonstrate the ability to judge whether A or B is better, trace, retrieve, or complete some other performance is the type of measuring device useful for evaluating student performance and the system. Stated succinctly, tests used to evaluate the system must require students to do something.

Problem tests may be either teacher- or publisher-prepared. The primary concern is that the problem test can be used to determine if students meet predetermined performance criteria, i.e., "with 100 percent accuracy."

When developing/administering/grading problem tests, certain guidelines might be considered, including:

1. The test should derive from published competencies.
2. The test should include content taught and emphasized in class.
3. There are instances when it is acceptable to have an "open book" test, e.g., when the content relates to material on end-of-accounting period activities.
4. Sufficient time should be allowed for the slowest working, competent student to complete the exam.
5. Sufficient supplies, instructions, etc., should be given the students.
6. The classroom should be quiet.
7. Point values for parts of the exam should be published.
8. Scoring should include the "one error, one penalty" principle. For instance, when completing a worksheet, a student should be penalized only once for an improper adjusting entry even though his/her work beyond the Adjustment columns does not agree with the scoring key.

9. Problem tests, to be of maximum value, should be returned to students within two class meetings and thoroughly reviewed.

Practice Sets Practice sets can be used to evaluate large segments of accounting content. When evaluating practice sets, emphasis should be placed on the student's ability to use (retrieve) accounting information and to perform (do) accounting procedures.

Publishers of practice sets supply users with an instrument that requires students to retrieve information from the set. In addition, teachers have developed instruments (similar to Figure 22) to determine whether students can perform various accounting procedures.

Insert Figure 22

Simulations Accounting simulations (other than practice sets) enable the teacher to evaluate both accounting skills and interpersonal skills. The difficulty in evaluating performance on a simulation relates to sorting out the contributions and skills of individual students. Thus, the instrument used to evaluate performance on a simulation is different from that normally used in the classroom, but very much like that used in industry. One such instrument is illustrated in Figure 18.³³

Insert Figure 23

Cooperative Work Experience Cooperative work experience can be an excellent means for evaluating performance. The difficulty lies in obtaining a cooperative work station that is appropriate to the kinds of performances being evaluated by accounting instructors.

Observation Instruments Affective behavior is a dimension of vocational competence. Thus, accounting teachers should develop affective competencies and evaluate affective performance. The difficulty is measuring affective performance. Popham, Schrag, and Blockhus³⁴ state:

SUN-N-SHI**EMPLOYEE EVALUATION SHEET**

For each work habit listed on the left, select the group of words on the right that best describes the employee. Circle the appropriate point value. When you have rated the employee on all the work habits, add the points and record the total.

Employee Name _____ Job Title _____

Date _____ Rated by _____ Total Points _____

WORK HABITS	RATING		
1. Attendance and Punctuality	Record is poor	Record is acceptable	Record is excellent
Does the employee come to work every day?			
Does the employee come to work on time?	4	8	10
2. Job Knowledge	Need to improve knowledge of job	Good knowledge of job	Excellent knowledge of job
Does the employee know what to do on the job?	6	12	15
3. Quantity of Work	Very little work done	Good amount of work done	High volume of work done
How much work does the employee complete?	6	12	15
4. Quality of Work	Need to improve quality of work	Good quality of work	High quality of work
How accurate and neat is the employee's work?			
Does the employee make frequent errors?	8	12	15
5. Dependability	Often undependable	Usually dependable	Very dependable
Does the employee complete work satisfactorily and on time?			
Does the employee follow tasks through to completion?	6	12	15
6. Attitude	Poor attitude	Good attitude	Exceptionally good attitude
Does the employee cooperate and work well with others?			
Does the employee help others?	3	8	10
7. Resourcefulness	Not very resourceful	Resourceful	Very resourceful
Is the employee able to handle problems with little help? Does the employee need much supervision? Does the employee use time wisely?	4	8	10
8. Office Housekeeping	Sloppy and careless	Fairly neat, organized, and careful	Very neat, organized, and careful
Is the employee's work area neat and well organized? Is the employee careful with supplies and equipment?	3	8	10

FIGURE 23

Indisputably, the most accurate measure of a student's affective behavior is multiple controlled observations. . . . Before affective competencies can be evaluated, the teacher must structure observation instruments for the behaviors to be observed.

An example of an instrument that might be used to observe affective behavior is illustrated in Figure 19.³⁵

Insert Figure 24

The Feedback Loop

After terminal competencies have been evaluated using the above suggestions, the accounting teacher has some judgments to make. The judgments relate to whether students are achieving terminal competence. If not, the feedback loop is used. That is, the system is placed under the microscope to determine where modifications might be made. For instance, suppose the following terminal competency is not being achieved by a majority of the students:

Within 40 minutes, the student will accurately post 15 completed journal entries from single- and multi-column journals to blank general ledger accounts. All work must be error free. The student will be supplied with the completed journal entries and blank general ledger accounts.

Using the feedback loop the teacher begins to ask questions related to steps within the system, such as:

Do my performance exams measure the terminal competencies? If not, the exam is suspect and needs to be modified.

Did I provide students with enough time for mastery to take place? If not, perhaps the pacing needs to be modified.

Were the component skills adequately illustrated? If not, perhaps the introduction of additional visual aids needs to be considered.

Are the performance conditions realistic in terms of vocational standards? If not, perhaps additional survey work must be completed and performance conditions modified.

Figure 4.6 Criteria sheet for controlled observation

Name of student observed _____

Competency: Tolerate routine tasks by displaying the following behaviors.

	Dates observed	Behavior	
		Acceptable	Needs attention
1 Works quietly without wasting time visiting with neighbor.			
2 Does not exhibit frustrations by making verbal protests or complaints			
3 Remains calm and attentive to work.			
4 Consults with others only when necessary to resolve a problem.			

FIGURE 24

The above questions are illustrative of those that might be asked. The key is that the evaluation step in the systems approach enables the teacher to determine if the system is working and the feedback loop enables the teacher to determine where system modifications might be made.

DERIVING ACCOUNTING GRADES

No dimension of the discussion on evaluation to this point has considered grades because the notion of evaluation does not include grading. However, we can use some of the measures used to evaluate the system for a second purpose--that of deriving letter grades. Before discussing one system for deriving grades, two points should be clear: letter grades do not indicate accounting competence because the factors used to derive grades from school-to-school vary. Thus, an A in one high school will denote something entirely different than an A in a second school, because the factors used to derive the two A's vary. Second, the scheme to derive grades is subjective, at best. Whether an instructor uses points, tenths of points, letters, or some other measure to derive grades, the individual instructor determined the cutoff for the A's, B's, etc.

There are many activities that take place in an accounting classroom that can be the basis for a letter or number grade. Some of the activities are listed below.

1. Knowledge of accounting terms
2. Completion of accounting drills
3. Completion of homework assignments

4. Completion of chapter problems
5. Completion of chapter performance exams
6. Completion of unit performance exams
7. Completion of projects
8. Completion of practice sets
9. Completion of simulations
10. Demonstration of attitude-related skills
11. Completion of problem solving activities
12. Participation in class

The teacher's first dilemma relates to which of the above should become the basis for a grade (letter or number). As a first suggestion, use only those items to derive grades that relate to terminal competencies. Use the other items as learning activities designed to provide feedback concerning where instruction needs adjusting. Thus, the list of activities when classified into the basis for deriving grades would appear as follows:

	<u>Used for</u> <u>deriving grades</u>		<u>Point</u> <u>Value</u>
	Yes	No	
1. Knowledge of accounting terms		x	
2. Completion of accounting drills		x	
3. Completion of homework assignments		x ^a	
4. Completion of chapter problems	x ^b		5
5. Completion of chapter performance exams	x		50
6. Completion of unit performance exams	x		100
7. Completion of projects	x		100
8. Completion of practice sets	x		100

9.	Completion of simulations	x	100
10.	Demonstration of attitude-related skills	x	100
11.	Completion of problem solving activities	x^c	
12.	Participation in class	x	50

- a- Most homework is drill oriented and is used as feedback. However, many teachers attach some weight to homework, for grading purposes, as a means to encourage completion.
- b- Include work completed in class and related to terminal competencies.
- c- Generally included as an enrichment activity. However, could be included if the problem solving activity is related to a terminal competency.

The teacher has now decided what to include for grading purposes.

The next decision relates to the weight given each activity. Most teachers assign arbitrary point values to the various activities. Note that illustrative point values have been given to each activity. Thus, for each chapter problem a student could earn a maximum of 5 points, and a maximum of 100 points could be earned for each project.

During the marking period each student would accumulate points. At the end of the marking period, point totals would be run off on an adding machine and converted into percentage or letter grades. Using arbitrary or school-wide percentages, letter grades could be derived as follows:

A = 93-100% of the total points possible for the marking period

B = 85-92% of the total points possible for the marking period

C = 77-84% of the total points possible for the marking period

D = 70-76% of the total points possible for the marking period

F = 69-76% of the total points possible for the marking period

Thus, any student who earned 93-100 percent of the total points possible for the marking period would receive an A. The student who earned between 85 and 92 percent of the total points possible would receive a B, and so on.

The above system has both advantages and disadvantages. It is arbitrary in that the teacher chooses the percentage cutoffs and the penalty points for each activity. It also assumes that progress to successive units is possible without mastery of the present unit.

Positively, the system does allow for grades to be derived; if publicized, students do have some sense of how they are being graded; and, students are not competing against one another, for they are not being compared against their peers.

Alternative Grading Systems

There are a number of alternatives to the grading system described above. Some schools view accounting competencies as either COMPLETED or IN PROCESS (of being completed.) Letter grades are then related to the number of competencies completed. A second alternative would be to consider domain referenced grading.

Domain Referenced Grading The competencies that will be developed by accounting teachers are in the cognitive and affective domains. The cognitive domain relates to the ability to engage in mental activities, e.g., apply knowledge, comprehend, analyze, synthesize, evaluate, etc. The affective domain relates to an individual's feelings, values, and in our area of concern, attitude toward work. Each domain--cognitive and affective--has levels. The cognitive domain has levels ranging from knowledge (low) to evaluation (high). The affective domain has levels ranging from receiving (low) to internalizing (high).

The purpose of vocational instruction is to develop the highest competency levels possible. Thus, competencies should be written at high levels, as well as at low levels. Once competencies are written at all levels, the teacher can develop a domain referenced grading system. Such

a system relates letter grades to the number and level of competencies successfully completed in the cognitive and affective domains. Prior to beginning instruction, the accounting teacher can specify the pattern of competencies that must be completed for an A, B, or other letter grade.

In a domain referenced grading system, students are not competing with other students for a grade (norm referenced). The only competition involved comes from within the student, as he/she attempts to satisfy the criteria necessary to complete a pattern of competencies commensurate with a desired grade (criterion referenced). Thus, it is entirely conceivable (desirable) that all students can receive A and B grades.³⁶

Competency Cards Rather than use grades as the exclusive indicator of competence, students and employers could be provided with evidence of the kinds of competencies possessed. Illustrated below is a Competency Card³⁷ that appears to be infinitely more informative than an A, B, or another letter grade, as an indicator of competence.

Insert Figure 25

EVALUATION AND ACCOUNTABILITY

Much has been said and written about accountability in education. The bottom line of the various comments is to improve both the quality and quantity of learning by holding teachers accountable. The discussion in this chapter has described part of an accountability system for teachers. The monitoring of accounting instruction allows the teacher to constantly revise and move towards terminal competencies and the evaluation of outcomes allows the teacher to determine if these competencies are being achieved. Once the teacher knows the relative success of his/her students, the feedback loop suggests where new system changes might be initiated.

MODEL CURRICULUM PROGRAM

FOR

ACCOUNTING OCCUPATIONAL CAREER CLUSTER

GRADE 10

Typewriting

GRADE 11

Accounting
Intro to Data
Processing
Business Math/
Bus. Machines

GRADE 12

Business
Communications
Two-Hour
Accounting
Specialty Lab

General
Business
Speech

Business
Principles
(Semester)
Business
Economics
(Semester)
Business Law
(Semester)

Cooperative
Work Experience

Special Areas
of Learning
Experience

Related Skills
and Knowledge

SPECIAL AREAS OF LEARNING EXPERIENCE: In order to offer a comprehensive Accounting Occupational Cluster Program, the identified special areas of learning experience are emphasized during the designated grade levels.

RELATED SKILLS AND KNOWLEDGE: Depending on the circumstances of each high school in Oregon, these related skills and knowledge areas are included in the Accounting Occupational Career Cluster Program whenever it is possible.

COMPETENCY CARD FOR

ACCOUNTING OCCUPATIONAL CAREER CLUSTER PROGRAM

STUDENT RECORD



INSTRUCTION DIVISION
CAREER AND VOCATIONAL EDUCATION

OREGON DEPARTMENT
OF EDUCATION
942 LANCASTER DRIVE NE
SALEM, OREGON 97310

VERNE A. DUNCAN
STATE SUPERINTENDENT OF
PUBLIC INSTRUCTION

DATE _____

IMPORTANT NOTE: When reviewing this student record, please keep in mind that the competencies are listed according to their priority within each category. For example, the more important competencies are listed first within each category, e.g. A competency listed as 1 is the most important in each particular category followed by the next most important competency listed as 2, and etc.

ACCOUNTING KNOWLEDGE

The Accounting Occupational Career Cluster Program student can properly:

THEORETICAL BASES

- 1 identify the function of accounting within business
- 2 identify and use essential accounting-related vocabulary
- 3 understand and apply the concept of debits and credits
- 4 recognize and apply elementary generally-accepted accounting principles
- 5

TRANSACTION ANALYSIS

- 1 use accounts to analyze business transactions
- 2 use cash register tapes to record accounting data
- 3 use sales and purchase invoices to record accounting data
- 4 use debit and credit memorandums to record accounting data
- 5 prepare and interpret a flowchart of an accounting system
- 6

DATA INPUT

- 1 journalize transactions in a general journal
- 2 journalize transactions in special journals
- 3 record entries in a payroll register
- 4 journalize entries from data recorded in a payroll register
- 5 prepare accounting data for computer input
- 6 journalize transactions involving the use of a voucher system
- 7 journalize adjusting, closing, and reversing entries
- 8

CLASSIFICATION OF DATA

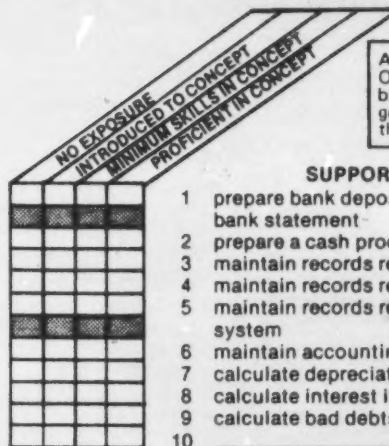
- 1 post from general and special journals to a general ledger
- 2 post from general and special journals to a subsidiary ledger
- 3 maintain accounts receivable records
- 4 maintain accounts payable records
- 5

PRIMARY FINANCIAL REPORTS

- 1 prepare an income statement and balance sheet for a service or merchandising business of a sole proprietor
- 2 prepare an income statement and balance sheet for a service or merchandising business organized as a partnership
- 3 prepare an income statement and balance sheet for a service or merchandising business organized as a corporation
- 4

SPECIAL REPORTS

- 1 prepare an individual federal income tax return
- 2 prepare payroll tax deposits
- 3 prepare quarterly federal income tax and FICA tax withholding report (Form 941)
- 4 prepare annual unemployment tax return (Form 940)
- 5



An example of a model curriculum for the Accounting Occupational Career Cluster Program is presented on the back side of this Competency Card. If a more detailed grade transcript of career education courses taken by the student is desired, please contact the high school.

SUPPORTIVE PROCEDURES AND SYSTEMS

- 1 prepare bank deposits, maintain a checkbook, and reconcile the bank statement
- 2 prepare a cash proof
- 3 maintain records relating to a payroll system
- 4 maintain records relating to fixed assets
- 5 maintain records relating to a periodic or perpetual inventory system
- 6 maintain accounting records relating to a petty cash fund
- 7 calculate depreciation using available methods
- 8 calculate interest income and interest expense
- 9 calculate bad debts expense using available methods
- 10

RELATED SKILLS AND PROCEDURES

The Accounting Occupational Career Cluster Program student can properly:

BUSINESS MATHEMATICS

- 1 add, subtract, multiply, and divide
- 2 calculate percentages
- 3 calculate problems involving the use of decimals
- 4

BUSINESS MACHINES

- 1 operate an electronic calculator
- 2 operate a ten-key adding machine
- 3 operate a photocopy machine
- 4 operate a bookkeeping posting machine
- 5

TYPEWRITING

- 1 type on an electric typewriter
- 2 type on a manual typewriter
- 3 type information on blank forms
- 4 type checks
- 5 proofread typewritten information
- 6

GENERAL OFFICE PROCEDURES

- 1 answer telephone calls
- 2 take and record messages
- 3 compose letters relating to business-oriented situations
- 4 file documents and correspondence using established filing system
- 5

Criteria which determine an acceptable level are too detailed to be included in this report. If you are interested in this detail, please contact the high school directly.

Thus, the teacher can suggest that these were my objectives, this is my instructional program, and these student performances are my outcomes. Moreover, the teacher can also suggest that within these confines additional competencies can/cannot be expected.

FOOTNOTES

CHAPTER 1

¹David Weaver and others, "Source Book and Key," Accounting 10/12, Third Edition, Gregg Publishing Division, McGraw-Hall Book Company, 1977.

²Many of the ideas and terms used in "Role of the Teacher," were adapted from, A Teaching-Learning System for Business Education, Popham, Schrag, and Blockhus, Gregg Publishing Division, McGraw-Hill Book Company, 1975.

³Ibid.

CHAPTER 2

⁴Robert Ash, "Accounting and the World of Work," (presentation made at the College of Saint Rose, NY, April, 1977.)

⁵U. S. Department of Labor, Bureau of Labor Statistics, Washington, D.C., Government Printing Office, 1975/76.

⁶Montgomery County Community College, Catalogue, 1977/78, Blue Bell, Pennsylvania.

⁷Marianne S. Battista, "The Effect of Instructional Technology and Learner Characteristics on Cognitive Achievement in College Accounting," (Unpublished doctoral dissertation, Temple University, Spring, 1976.)

⁸U. S. Department of Labor, Bureau of Labor Statistics, "Occupational Outlook Handbook," Government Printing Office, Washington, D.C., 1975/76.

⁹"U. S. News and World Report," April 3, 1978, p. 80.

¹⁰OP.CIT., U. S. Department of Labor.

¹¹U. S. Department of Labor, Bureau of Labor Statistics, "Area Wage Surveys--Philadelphia, Northeast Pennsylvania, York, Pittsburgh," 1977.

¹²"U. S. News and World Report," January 9, 1978, p. 24.

¹³Newton B. Becker, "Selecting A CPA Firm - CPA Firm Profile Questionnaire: EXPLANATION," The Becker CPA Review Course, Sherman Oaks, CA.

¹⁴Survey completed by the Cluster Committee for Business Education, City of Philadelphia, May, 1977.

¹⁵William R. Russo, "What's It Like to Be An Accountant," American Institute of Certified Public Accountants, 1970.

CHAPTER 3

¹⁶Margaret Casey Reap, "Review and Synthesis of Job Task Analysis in Beginning Bookkeeping and Accounting," unpublished doctoral dissertation, 1976.

¹⁷Leonard J. West, "Survey of Bookkeeping Job Activities in Relation to the High School Bookkeeping Curriculum," Delta Pi Epsilon Journal, November, 1974.

¹⁸Ernest R. Hilgard and Gordon H. Bower, Theories of Learning, 3rd Edition (New York: Appletton - Century Crofts), 1966, p. 24.

¹⁹Marianne Battista,

CHAPTER 4

²⁰Benjamin S. Bloom, Learning for Mastery," UCLA, Evaluation Comment. Center for the Study of Evaluation of Instructional Programs, May, 1968, Volume 1, Number 2.

²¹David Weaver, Hanna, J. Marshall, and Freeman M. Herbert, "Sun-N-Ski: An Accounting Simulation," Gregg Division, McGraw-Hill Book Company, 1977.

²²Teachers preparing learning activity packets might wish to review, "A Simple Guide for the Preparation of Learning Activity Packets," prepared by Alpha Chi Chapter, Delta Pi Epsilon, Rider College, Trenton, NJ.

²³David Weaver and others, "Individualized Learning Guides," Accounting 10/12 series, Third Edition, Gregg Division, McGraw-Hill Book Company, 1977.

²⁴Adapted from, "Individualizing Instruction in Business Arithmetic," Robert A. Schultheis, Journal of Business Education, December, 1975.

²⁵Chalkboard Criteria.

²⁶William Selden, The Business Education Curriculum, Bureau of Vocational Education, Pennsylvania Department of Education, 1974.

²⁷Adapted from Module C-20 "Use Subject Matter Experts to Present Information," The Center for Vocational Education, The Ohio State University, published by American Association for Vocational Instructional Materials, University of Georgia.

²⁸Adapted from Anne Scott Dauthtrey, Methods of Basic Business and Economic Education, South-Western Publishing Company.

²⁹For a complete discussion of guided discovery, refer to, Musska Mosston, Teaching: From Command to Discovery.

³⁰David Weaver and others, Accounting 10/12, Third Edition, Gregg Publishing Division, McGraw-Hill Book Company, 1977.

³¹Adapted from, A Teaching-Learning System for Business Education, Popham, Schrag, and Blockhus, Gregg Publishing Division, McGraw-Hill Book Company, 1975.

CHAPTER 5

³²Ibid.

³³Op. cit., Weaver, Marshall, and Freeman.

³⁴Op. cit., Popham, Schrag, and Blockhus.

³⁵Ibid.

³⁷"Competency Card for Accounting Occupational Career Cluster Program," Instructional Division, Career and Vocational Education, Oregon Department of Education.

³⁶For a more complete discussion of domain referenced grading, refer to the text written by Popham, Schrag, and Blockhus, cited above.